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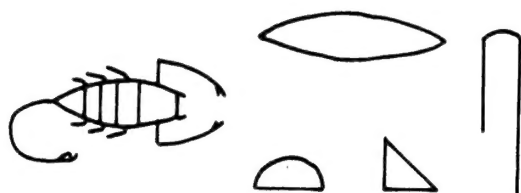
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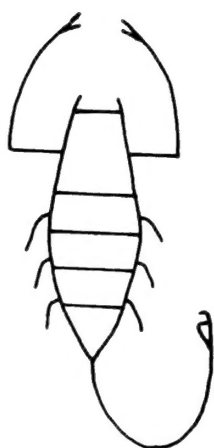
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PREFACE

"SERKET", the oldest name of an arachnid in our world, as written in Old Egyptian language, is a new arachnological bulletin for publication of arachnological studies, especially those dealing with the Egyptian fauna.

This bulletin will not be published periodically. It will be circulated only to those who are interested in this kind of studies.

The continuation of "SERKET" depends upon your evaluation of the published material and your contributions for publication.

It is important here to acknowledge those whose efforts were necessary for the publication of this issue, specially my grandfather Mohammed A. El-Hennawy and my father Kamal El-Din M. El-Hennawy for their financial support.

Lastly, I like to dedicate this issue to the memory of the late great arachnologist: Prof.Dr. Paolo Marcello BRIGNOLI .

The Editor



Preliminary notes on the biology, distribution,
and predatory behaviour of Pseudopompilus humboldti
(Dhlb.) (Hymenoptera: Pompilidae).

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Summary

This paper deals briefly with: 1. The predatory behaviour of Ps. humboldti, its attack to paralyse the Eresid spider St. dufouri, and how it prepares its prey. Its ethological type and its specificity were discussed and a new term "Positioning" was added. 2. Its biology, the division of its larval stage into sucking and chewing periods, the longevity of each stage was recorded too. 3. Its distribution in Egypt in comparison with the distribution of its prey, concluding that it is not rare in Egypt. Its world distribution was discussed too.

Introduction

In September 1979, I had noticed the presence of a bean-like small white egg on the abdomen of a paralysed Eresid spider, Stegodyphus dufouri (Audouin) 1827. There was some time before I could know the species of that Pompilid wasp. My main references to identify it were: Haupt (1927), Mari (1942), and Priesner (1955). Its species is Pseudopompilus humboldti (Dahlbom) 1845. I could not find any published work dealing with the biology of that wasp. The last paper, which I could know, dealing with that species (distinguishing characters) was written by Haupt more than twenty years ago.

Most of the studied cases were found in Cairo, in Stegodyphus nests on Thuja canadensis trees. The other cases, out of Cairo, were found in nests built on walls and fences. This study includes autumns of 1979, 80 and 81.

Material and Methods

All the specimens used in this study were collected as: Eggs 13, Larvae 2 (1 first and 1 fifth instar) (all on paralysed spiders), Cocoons 18 unhatched and 8 hatched. Also, 2 adult females were caught and used in the study of the predatory behaviour. One of them had put two eggs and the other put only one. Hence, three other eggs were added to the studied cases. Localities are listed in distribution section.

Methods: Collecting specimens, keeping them alive in natural conditions for biological study and rearing adult female wasps in a wooden box (50 x 50 x 50 cm) with two sides of glass for studying their predatory behaviour. Diluted honey was used for feeding. Illumination and temperature were increased a few minutes before putting a spider's nest inside the wasp's cage by means of a 300 W lamp. A simple magnifying lens was used to observe the wasp's behaviour through it. All measurements are in millimeters.

Results

I. Predatory behaviour:

The adult female wasp attacks the spider in her nest to paralyse her and to put her egg on the spider's abdomen. Four cases are described here briefly.

1. Nov. 22, 1979. The wasp, found in a St. dufouri's nest on Salah Salem Road (Cairo), was put in the cage with three spider nests. The wasp landed on the first nest. The spider moved violently but the wasp grabbed quickly her first left leg, just after the patella, using her mandibles, bending her abdomen beneath the spider's cephalothorax, stinging her between the first and second left legs. Parts of a second were enough for that attack. Then the wasp examined the opened nest of her prey and flew. Landing on the second nest, the small paralysed spider inside it could not move, save a very weak short tremble. Then the wasp flew again. The third landing was on the nest where I found the wasp herself a day before with a semiparalysed spider. The wasp could sting the spider the same way as before. The wasp remained grasping the spider's leg for few minutes. The spider trembled slightly two minutes after the sting, but no movement after that. The wasp turned the spider upside down and spent 27 minutes pulling and pushing the spider from all of her legs (and sometimes from the spinnerets and the anal tubercle), cutting the silk threads entangling the spider legs' claws, and in antennating the spider's body. In the same time, the wasp leaves her prey to enter the dark side of the nest to examine it, coming back quickly to reantennate her prey. Then, the wasp succeeded to pull the paralysed spider into the mouth of the dark nest, putting her on her right side. Then the wasp tried manytimes to push the left fourth leg forwards crossing over the other three legs, to fix it in that position, but she could not. Lastly, she began again to antennate the spider's body, specially the left side of the abdomen. Just after that, the wasp began to move her abdomen end on the left side of the

spider's abdomen in a movement like that of a "blind stick" for about 2:30 minutes. Then the egg began to come out, within 20 seconds. During laying the egg, the sting appeared completely out of the abdomen. Lastly, the egg became glued to the left side of the spider's abdomen in a shining pearly white colour and bean-shaped due to the curvature degree of the spider's abdomen. The egg was laid 50 minutes after the sting. Then the wasp rested for a few seconds and flew after, away from the nest. The egg lost its shining a day after. It was about 2 mm long.

2. The same female wasp was used in another attack a day after, Nov. 23. The spider was normal. Hence, there were many landing trials. The last landing was followed by a quick attack and a sting. After two minutes, the spider trembled for 30 seconds. The same examination and antennation of both the nest and the prey were done. The same failing trials for bending the 4th leg, the right one this time. The egg was laid within 15 seconds on the right side of the spider's abdomen, the same way as before. It was laid 47 minutes after stinging.

3. December 5, 1979. The same wasp again. She stung the spider grabbing her 3rd left leg. The sting was inserted between the 3rd and 4th left coxae. No trial was made to bend the 4th leg and no egg was laid even after two days.

4. July 4, 1980. I tried to make a female wasp (hatched in captivity) attack another spider species of the same genus, Stegodyphus lineatus (Latreille) 1817, collected from Ras El-Barr (near Damietta). It was an adult female spider with two characteristic black abdominal patches. The wasp attacked and stung the spider and behaved the same as before. The egg was laid in the following morning and vanished at the evening ?! (devoured)?

II. Biology:

The Egg: 16 eggs had been used in this study; 3 of them were laid in captivity; the other 13 had been collected from the garden of Ain Shams Univ. One of those eggs had been squeezed by the right fourth leg of the spider which came back to its natural position, because of imperfect positioning by the mother wasp.

The egg is about 2 mm long and 0.5 mm wide (diameter). It is white or something greyish white in colour. It is always glued along its whole length to either the right or left side of the spider's abdomen and curved according to its curvature. Therefore, it is usually bean-like. Once, I had found an egg glued to the front of the spider's abdomen and both the right and left fourth legs in their normal position. The egg hatches with-

in less than three days mostly (2-3 days). This depends partly on temperature.

The Larva: 17 larvae had been observed; 2 of them were collected after hatching: 1st and 5th instars larvae; the other 15 larvae hatched in captivity, and 3 of them had fallen and died 3-4 days after collecting (as eggs).

The larvae of this species, although I could not examine them accurately, agree with the general description of Evans (1959). Also, they are similar, in appearance, to the drawing of a whole Anoplius specimen, fig. 25 (Evans, 1959).

The measurements of the larvae vary greatly according to the size of the prey (the spider). The 5th instar larva is about 12-24 mm long and 3-6 mm wide. These measurements are not accurate because they were taken from alive moving larvae, only five larvae. The apodous newly hatched larva is clearly white and lightly segmented with a hardly recognizable head. It begins feeding at the same site where the egg was attached. Small movements behind the head can be observed. Its colour becomes darker and greyish or sometimes fleshy as it sucks in the fluids of the spider through a small hole in its abdomen's integument. Numerous white granular bodies can be seen under the still transparent cuticle of the 4th and 5th instar larvae.

I could not determine exactly the number of moults in the larval stage, but I believe that five instars were present. Upon reaching the 5th instar, the larva begins to chew rather than suck its food. It consumes the spider's abdomen first, then the cephalothorax and legs. Usually the cephalic region and some legs are left if the spider is large.

The duration of larval instars is 5-7 days in Sept.-Oct., 8-10 days in early Nov., and 16-23 days in late Nov. This depends too on temperature. The full grown larva needs few hours of rest before cocooning.

The Cocoon: 14 cases were observed. The larva begins to spin an outer net of golden hard silk, which is protective in function, then it builds the cocoon itself inside that net. The cocoon is white or yellowish white, capsule-shaped, rounded at both ends, and composed of three layers. Its measurements, from 40 cocoons (collected or built in captivity), are :

Range	4.5 - 9.0 mm wide (diameter),	10.0 - 18.0 mm long,
Mean	6.457 mm wide	, 12.940 mm long.

The cocoon needs 1-2 days for being opaque.

The Pupa: I did not examine any pupa because I wanted to get the greatest number of adults without any loss.

If the cocoon is formed in Sept., it needs about three weeks to hatch. But if this happened in Oct.-Dec., it needs 164-224 days to hatch in May-June.

The Adult: hatches after cutting through the cocoon's wall, near one of its two rounded ends, a regular circular cut forming a lid. This lid does not separate completely after the emergence of the adult. It remains attached to the cocoon. The descriptions of both the male and female are found in the three references mentioned before (in the introduction).

III. Distribution:

All the specimens collected during this study are 43 ones. According to their localities, they are listed here:

Cairo (1979-81)	Ain Shams Univ. (Abbasyah)	13 eggs, 1 1st instar larve, 6 cocoons (1 of them was hatched), 1 adult ♀.
	Salah Salem Road (near Heliopolis)	3 cocoons (2 of them were hatched), & 1 adult ♀.
El-Fayum (1980-81)		1 5th instar larve, & 11 cocoons (5 of them were hatched).
Beni Suef (1981)		1 cocoon (unhatched).
Assiut (1981)		2 cocoons (unhatched).
Sohag (1981)		1 cocoon (unhatched).
Kena (1981)		1 cocoon (unhatched).
Luxor (1981)		1 cocoon (unhatched).

Hence, Pseudopompilus humboldti (Dahlbom) is found in Egypt along the Nile valley from Cairo to Luxor (30 00 N to 25 40 N). The distribution of this species is illustrated here in comparison with the distribution of Stegodyphus dufouri (Audouin) on the map of Egypt. This distribution reported here depends only on my own work. I have no evidence until now that proves or disproves the presence of this species in the Delta, north of Cairo. Further studies are necessary to know the complete distribution of this species in Egypt.

Discussion

I. Predatory behaviour:

The battle between the wasp and the spider does not happen in the open ground as in case of tarantula hawks of both genera *Pepsis* and *Hemipepsis* (Williams, 1956), nor as in case of *Agnoideus*

(Eberhard, 1970). The wasp only drives the spider near the mouth of her nest. Thereby the spider must elevate her body and the wasp becomes able to bend her abdomen rapidly beneath the spider's cephalothorax, grabbing tightly one of the spider's first legs with her mandibles, to sting the spider between her coxae. The spider cannot do anything to block this sudden fast attack. Hence, there is not any "battle" in this case, except if we consider the response of the spider against the wasp's landing on her nest's mouth, a defensive work which constitutes a part of a battle. The word "attack" is more convenient than a "battle" here.

The female wasp uses the spider's nest as a nest for her forthcoming larva. She fixes her egg on the spider's abdomen side after removing the fourth leg of that side forwards. The fixation of the fourth leg of the spider by reversing it to be attached by claws to the nest wall in front and up of the cephalothorax is a very characteristic action. After laying the egg, the wasp leaves the nest opened and flies.

The ethological type of P. humboldti is a unique one. It is greatly different from those mentioned by Cazier and Mortenson (1964). No excavation and no closing of nest could be found here. Transportation of the prey is internal (inside the prey's nest), and is followed by another action which is more important and unique. It is "Positioning" or putting in position, i.e. moving the spider's fourth leg to be attached to the nest's wall in front of the body. Then this ethological type can be summarized in the following symbols: VPTRO (V = hunting, P = paralysis, T = transportation, R = positioning, O = oviposition). All these symbols except R belong to Iwata's system of abbreviations, the R is new. That's in spite of knowing that T and R are two parts of one operation, i.e. preparation of the prey.

The specificity of P. humboldti in preying on the Eresid spider S. dufouri is not exactly sure. The adult wasps hatch from cocoons mostly in May-June, while S. dufouri spiders become adult and in a convenient size, as a prey, in September-November. What do the adult wasps do from June to September? Do they prey on another spider species? If yes, on what species? I try to find the answers of these questions. I have done some work on S. lineatus (Latr.) in the region of Ras El-Barr near Damietta. This species becomes adult in April-June. Also, in an experiment mentioned here before, an adult female S. lineatus had been attacked by this wasp and an egg was laid. But I have no proof till now about any kind of relation between this wasp and S. lineatus in nature. Further studies are

required to be able to state if P. humboldti is specific or not.

II. Biology:

The biology of this species is similar to that of Dipogon sayi Banks (Medler & Koerber, 1957) and to Pepsis sp. (Williams, 1956) with many differences especially in stages' duration.

The squeezing of an egg and falling of three larvae happened in cases collected from nests found on the same tree. Shaking, vigorous trembling of an uncompletely paralysed spider, and probably imperfect gluing may be the reasons of larvae falling. But, does that happen in nature? I had found many cases of paralysed spiders, many of them were "in position", with neither an egg nor a larva glued to the abdomen.

The larval stage can be unequally divided into two periods according to feeding way. The "Sucking period" = 1st-4th instars. The "Chewing period" = 5th instar. The growing rate which is normal and regular in the first period, changes suddenly after the fourth moult to be greatly accelerated.

The cocoons formed in Sept. hatch after a relatively short period, while those formed later in Oct.-Dec. need few months before hatching. This means only that in first case pupation begins after a short time, while in the second case the larva overwinters in the prepupal stage until May, then it begins pupation. That agrees with Williams (1956) and Medler & Koerber (1957).

The longevity or duration of each stage depends partly on temperature. The prepupal stage longevity within the cocoon may be related also to the seasons during which the prey (spider) becomes adult.

III. Distribution:

The known distribution of P. humboldti, according to Haupt (1927), is South Europe until Asia and Egypt. Priesner (1955) stated that he had seen two females from Suez in the Collection of Ministry of Agriculture (Cairo), and added that this species is rare in Egypt. According to my results, I can state that this species is not rare in Egypt. The map of distribution illustrated here shows evidently the relation between the distribution of P. humboldti and that of S. dufouri from Cairo to Luxor. I could not find this species in the Delta, north of Cairo, in spite of the fact that most of my collecting work had been done in that area. This absence may be due to something wrong in my way of work. More accurate collecting work must be done before stating the definite distribution

of this species in Egypt.

The world distribution of this species must be also discussed taking in consideration the distribution of its known prey, S. dufouri. According to Simon (1910), this spider had been found in Egypt, Tunisia, Ethiopia, and South of Arabia (Aden). Di Caporiacco (1933) added other localities in Libya. P. humboldti may exist too in the same localities. There is not any known record of S. dufouri from South Europe. Thence the presence of P. humboldti in South Europe (Haupt, 1927 and Mari, 1942) means that it can prey on other spider species, or in other words, it is an unspecific species in its predatory behaviour. Lastly, many questions still need answers to get the true definite distribution of P. humboldti.

References

- Caporiacco, L.di 1933: Spedizione scientifica all'Oasi di Cufra (Marzo-Luglio 1931). Aracnidi. Ann.Museo Civ.St.Nat.Genova 56: 311-340.
- Cazier, M.A. & Mortenson, M.A. 1964: Bionomical observations on Tarantula-Hawks and their prey (Hymenoptera: Pompilidae: Pepsis). Ann.Ent.Soc.Amer. 57(5): 533-541.
- Eberhard, W. 1970: The predatory behavior of two wasps, Agenioideus humilis (Pompilidae) and Sceliphron caementarium (Sphecidae), on the orb weaving spider Araneus cornutus (Araneidae). Psyche 77(2): 243-251.
- Evans, H.E. 1959: The larvae of Pompilidae.(Hymenoptera). Ann.Ent.Soc.Amer. 52(7): 430-444.
- Haupt, H. 1927: Monographie der Psammocharidae (Pompilidae) von Mittel-, Nord- und Osteuropa. Deutsch.Ent.Zeitschr.,Beiheft: 161-367.
- Mari, J.G. 1942: II. Contribucion al conocimiento de la fauna himenoptero-logica de España. EOS 18(1): 69-95.
- Medler, J.T. & Koerber, T.W. 1957: Biology of Dipogon sayi Banks (Hymenoptera, Pompilidae) in trap-nests in Wisconsin. Ann.Ent.Soc.Amer. 50(6): 621-625.
- Priesner, H. 1955: A review of the Pompilidae of Egypt (Hymenoptera). Bull.Soc.ent.Egypte 39: 1-215.
- Simon, E. 1910: Catalogue raisonné des Arachnides du Nord de l'Afrique. (1re partie). Ann.Soc.ent.France 79: 265-332.
- Williams, F.X. 1956: Life history studies of Pepsis and Hemipepsis wasps in California (Hymenoptera, Pompilidae). Ann.Ent.Soc.Amer. 49(5): 447-466.

Fig. 1

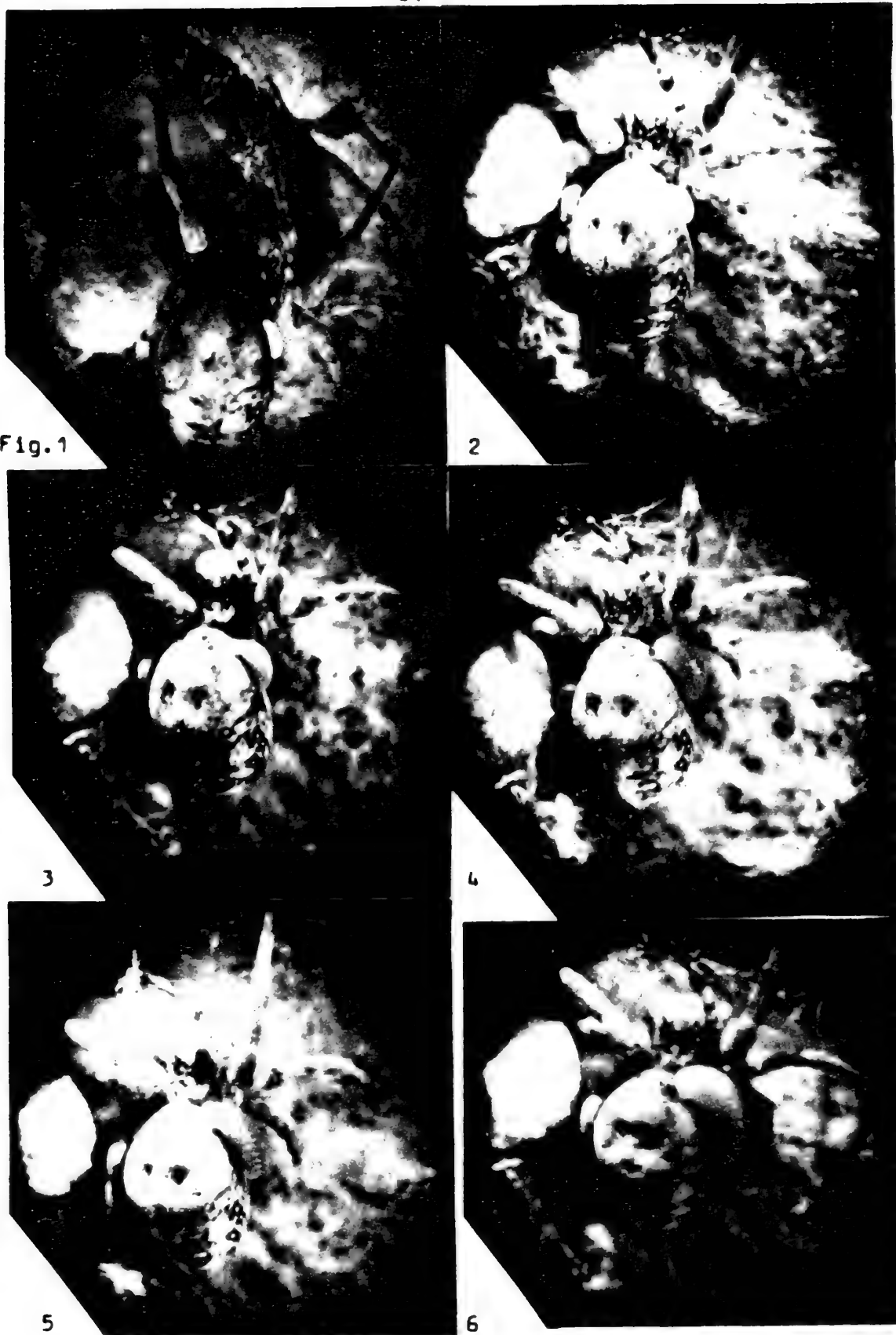


Figure 1. Egg of *P. humboldti* attached to the right side of *S. dufouri*'s abdomen. 2. 1st instar larva. 3. 2nd instar larva. 4. 3rd instar larva. 5. Just after third moulting. 6. 4th instar larva.

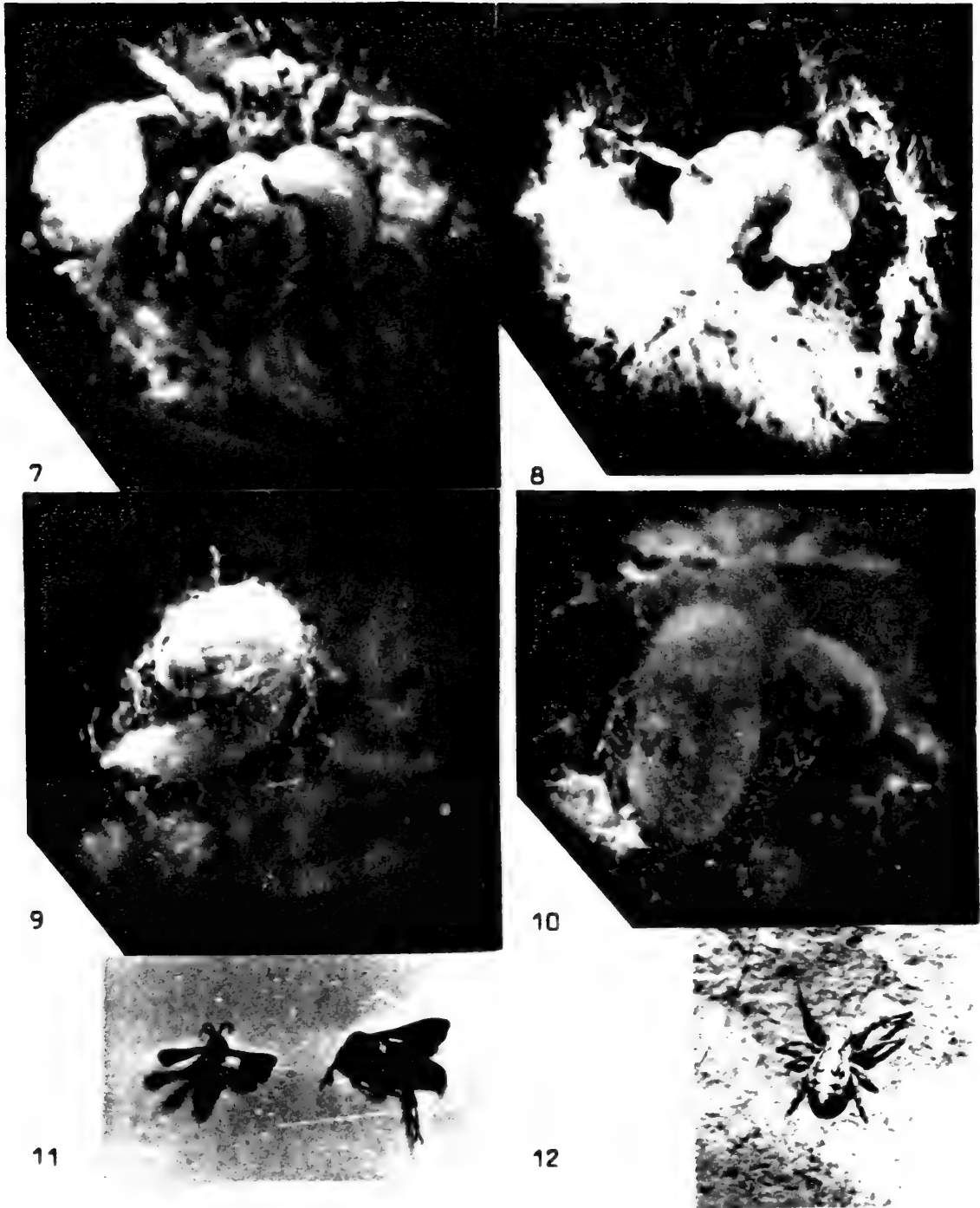


Figure 7. 4th instar larva, 12 hours after fig.6 .
8. 5th instar larva with spider's remnants. 9. Cocooning.
10. The cocoon. 11. Adult male (left) and female (right).
12. The prey, female Stegodyphus dufouri.

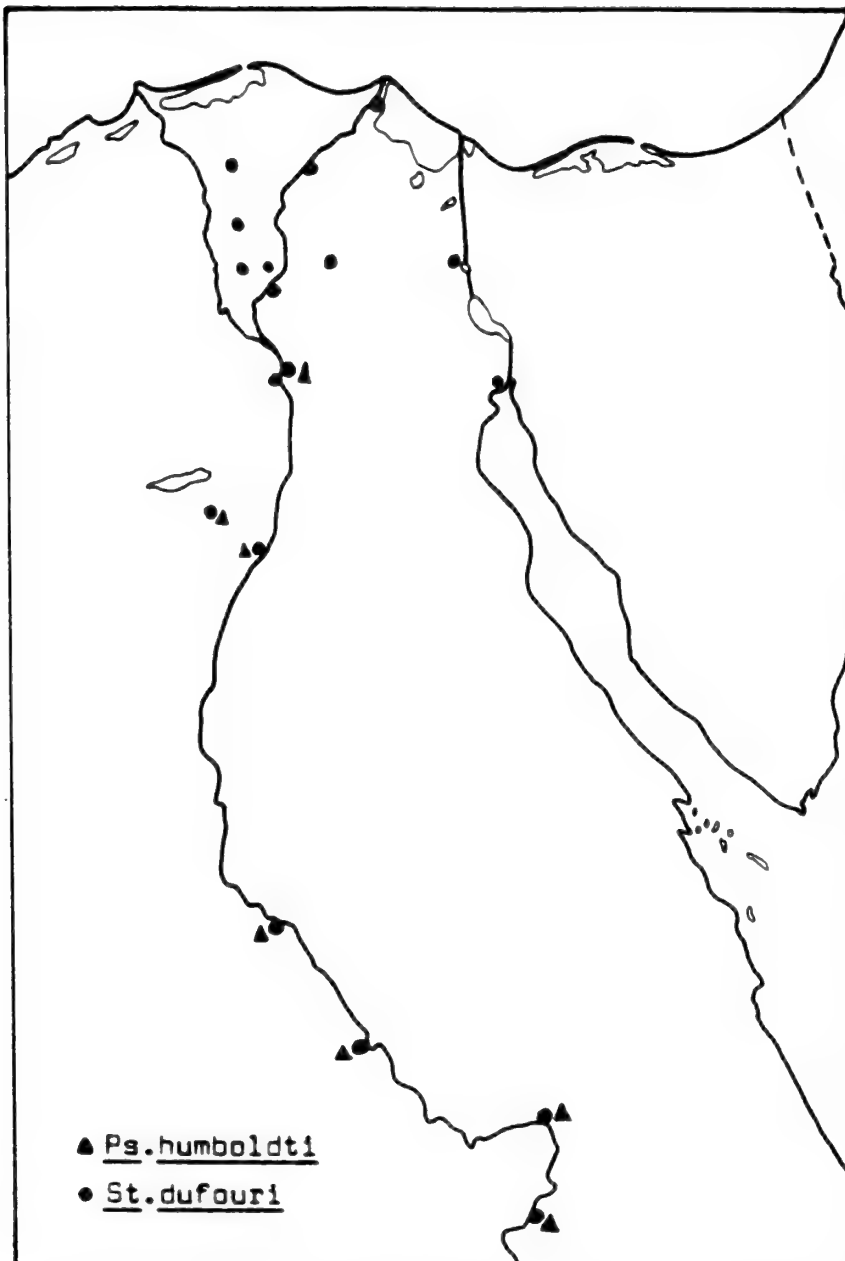


Fig. 13 Distribution map of Ps.humboldti (triangles) in Egypt, in comparison with the distribution of St.dufouri (circles).

A list of Egyptian spider genera

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This list includes the spider genera which are found in literature recorded from Egypt. These genera are arranged alphabetically with the number of species (and subspecies) of every genus after its name. The families are arranged alphabetically too, within two infraorders.

I hope to be able to deal with every family in detail, in the following publications. But until preparing the perfect species list, I think it is better to have this genera list published in the following form.

<u>Family</u>	<u>Genera</u>	Number of genera / species (+subsp.)
Order ARANEIDA		
Suborder OPISTHOTHELA		
Infraorder MYGALOMORPHAE		
1 Nemesiidae	Nemesia 1	1 / 1
2 Theraphosidae	Chaetopelma 3	1 / 3
Infraorder ARANEOMORPHAE		
3 Agelenidae	Agelena 2+1, Tegenaria 3, Tetrax 2	3 / 7 + 1
4 Araneidae	Araneus 7, Argiope 5, Cyclosa 1, Cyrtophora 1, Drepania 1, Gasteracantha 1, Gea 1, Larinia 1, Singa 3, Siwa 1	10 / 22
5 Cithaeronidae	Cithaeron 1	1 / 1
6 Clubionidae	Castianeira 1, Chiracanthium 6, Clubiona 1	3 / 8
7 Dictynidae	Altella 1, Archaeodictyna 1, Devade 1, Dictyna 3, Lathys 1	5 / 7
8 Dolomedidae	Dolomedes 1	1 / 1
9 Dysderidae	Dysdera 7	1 / 7
10 Eresidae	Dorceus 1, Eresus 4, Stegodyphus 4+1	3 / 9 + 1
11 Eusparassidae	Cebrennus 2, Cerbalus 3, Eusparassus 4, Olios 1, Palystes 1	5 / 11

12 Filistatidae	Filistata 1, Sebastata 1	2 / 2
13 Gnaphosidae	Aphantaulex 1, Berlandina 3, Camillina 1, Drassodes 7, Echemus 1, Leptodrasus 1, Megamyrmecon 2, Minosia 1, Minosiella 2, Nomisia 2, Poecilochroa 5, Pterotricha 6, Scotophaeus 3, Talanites 1, Zelotes 13	15 / 49
14 Hersiliidae	Hersilia 1, Hersiliola 1	2 / 2
15 Linyphiidae	Bathyphantes 1, Erigone 2, Silometopus 1, Tapinocyba 1	4 / 5
16 Liocranidae	Mesiotelus 1	1 / 1
17 Loxoscelidae	Loxosceles 1	1 / 1
18 Lycosidae	Allocosa 4, Alopecosella 1, Arctosa 3, Aulonia 1, Crocodilosa 1, Evippa 4, Geolycosa 1, Hippasa 2, Hogna 3, Lycorma 2, Lycosa 3, Megarctosa 1, Ocyale 2, Orinocosa 1, Orthocosa 1, Pardosa 9, Pirate 1, Trochosomma 1	18 / 41
19 Mimetidae	Mimetus 1	1 / 1
20 Mysmenidae	Synsphyria 1	1 / 1
21 Decobiidae	Decobius 3+1	1 / 3 + 1
22 Onopidae	Dysderina 1, Gamasomorpha 2, Opopaea 1, Sulsula 1	4 / 5
23 Oxyopidae	Oxyopes 2, Peucetia 2	2 / 4
24 Palpimanidae	Palpimanus 3	1 / 3
25 Philodromidae	Philodromus 8, Thanatus 6, Tibellus 2	3 / 16
26 Pholcidae	Artema 2, Crossopriza 1, Holocnemus 1, Pholcus 2	4 / 6
27 Pisauridae	Nilus 1, Pisaura 1, Rothus 1, Thalassius 1	4 / 4
28 Prodidomidae	Prodidomus 1, Zimirina 1	2 / 2
29 Salticidae	Aelurillus 4, Ballus 1, Bianor 1, Cosmophasis 1, Eugasmia 1, Euophrys 3, Hasarius 1, Heliophanus 5, Langona 2, Menemerus 6, Mithion 1, Modunda 1, Mogrus 2, Neaetha 3, Paraneaetha 1, Pellenes 1, Phlegma 3, Plexippus 1, Pseudicius 3, Salticus 2, Synageles 2, Thyene 1, Thyenula 1, Yllenus 1	24 / 48
30 Scytodidae	Scytodes 5+1	1 / 5 + 1

31	Segestriidae	Ariadna 1, Segestria 1	2 / 2
32	Selenopidae	Selenops 1	1 / 1
33	Tetragrathidae	Dyschirlognatha 1, Eucta 1, Tetragrathes 5	3 / 7
34	Theridiidae	Argyrodes 1, Crustulina 1, Euryopsis 5, Letrodectus 3, Steatoda 4, Theridion 6	6 / 20
35	Thomisidae	Firmicus 1, Heriades 1, Misumena 1, Oxyptila 2, Plectiscus 1, Synema 4, Thomisus 4, Tmarus 1, Xysticus 7	9 / 22
36	Titanoecidae	Titanoeca 2	1 / 2
37	Uloboridae	Uloborus 2	1 / 2
38	Urocteidae	Uroctea 2	1 / 2
39	Zodariidae	Lachesana 1, Trygetus 1, Zodarion 4	3 / 6

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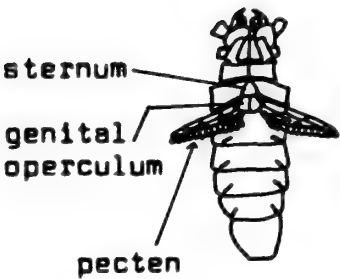
39 Families, 152 Genera, 340 Species, 4 Subspecies.

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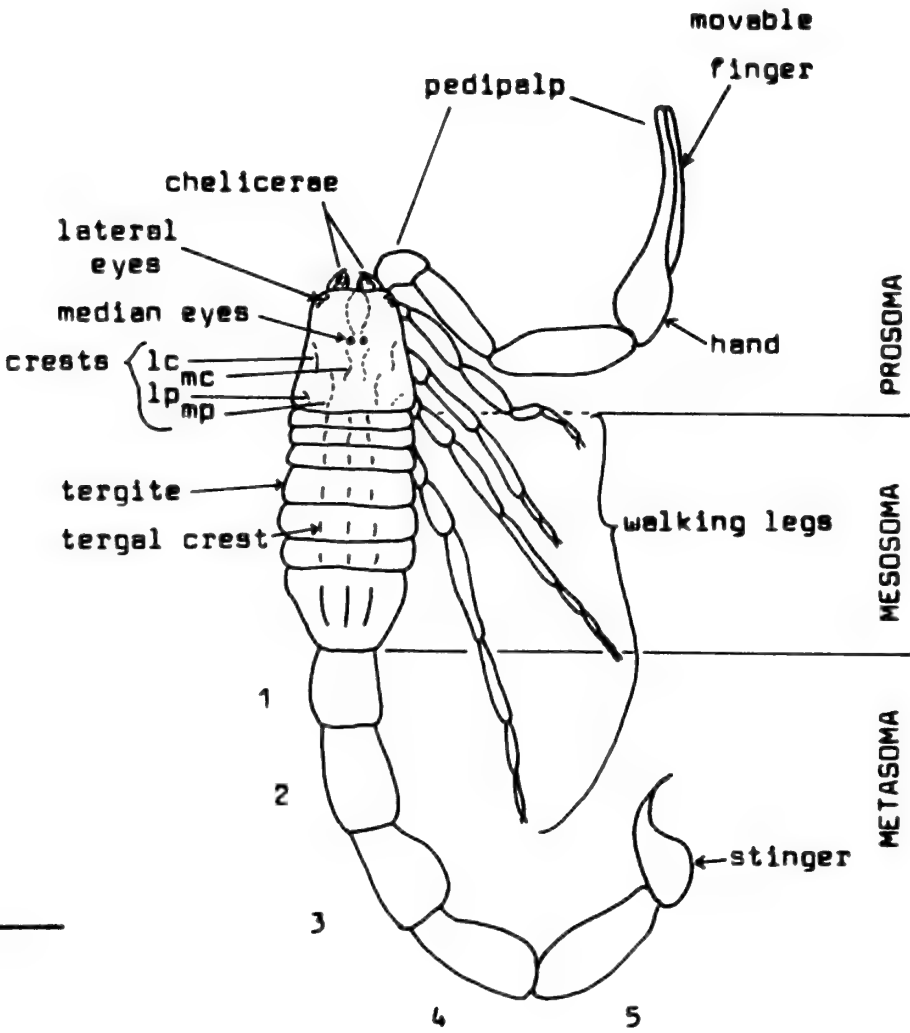
A simplified key to Egyptian scorpion species
(Arachnida : Scorpionida)

By Hisham K. El-Hennawy

This simplified key is prepared to fulfil the requirements of the student of scorpions in Egypt, for easy and quick identification.
A detailed study on Egyptian scorpions will be published later.



Ventral view of
prosoma and mesosoma
(diagrammatic).



- lc latero-central crest
- lp latero-posterior crest
- mc median-central crest
- mp median-posterior crest

Dorsal view of a scorpion
(diagrammatic)

A - Sternum : pentagonal



1

1. Stinger (telson): with subaculear tubercle



Family Diplocentridae

1. Nebo hierichonticus (Simon) 1872

-. -----: without subaculear tubercle

Family Scorpionidae

2. Scorpio maurus Linnaeus, 1758

B - Sternum : triangular

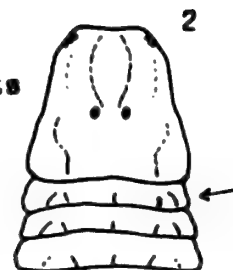
Family Buthidae



2. Mesosoma : anterior (1st & 2nd) tergites : with five crests

3. Leiurus quinquestriatus

Hemprich & Ehrenberg, 1829



2

-. ----- : ----- : with three crests or
without crests

3

3. Mesosoma : tergal crests : distinct

4

-. ----- : ----- : indistinct or absent

6

4. Mesosoma : tergal crests : posteriorly attenuated

Prosoma : median crests : united forming a straight line (mc+mp)



4. Compsobuthus wernerii (Birula) 1908

-. ----- : ----- : not projecting posteriorly

----- : ----- : not forming a straight line

5

5. Prosoma : with a lyra-shaped (∩) united crests (lc+mp)



5. Buthus occitanus (Amoreux) 1789

-. ----- : crests not forming a lyra Genus Androctonus

a

a. Metasoma : third segment : longer than wide

6. A. amoreuxi (Audouin) 1825

-. ----- : ----- : wider than long

b

b. Pedipalp : hand : slender

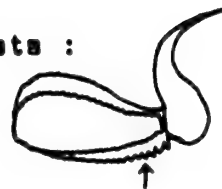
7. A. bicolor Hemprich & Ehrenberg, 1829

-. ----- : ---- : broad and stout

c

c. Metasoma : fifth segment : teeth of latero-ventral crests :
increasing in size posteriorly

Metasoma : fourth segment : wider than long
(Dark-coloured species, found in Sinai only)



8. A. crassicauda (Olivier) 1807

-. ----- : ----- : ----- :

almost regular

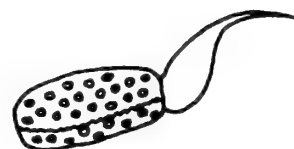
----- : ----- : longer than wide or nearly equal

(A more or less brightly coloured species)

9. A. australis (Linnaeus) 1758

6. Metasoma : posterior segments : with small depressions

Prosoma : without crests but with deep depressions



10. Orthochirus innesi Simon, 1910

-. ----- : ----- : without small depressions

----- : smooth

Genus Buthacus

*. Pedipalp : movable finger : 1. usually shorter than prosoma or
almost of the same length

2. with outer accessory denticles near
all series of denticles



11. B. leptochelys (Hemprich & Ehrenberg) 1829

-. ----- : ----- : 1. almost of the same length of prosoma
or slightly longer

2. without outer accessory denticles
near most series of denticles

12. B. arenicola (Simon) 1885

RECORDS

Stegodyphus lineatus (Latreille) 1817

(Araneida : Eresidae) in Jordan

During my third trip to Jordan (my wife's country), on August 1986, I could find two old nests of a *Stegodyphus* species (Eresidae) on short thorny bushes in Tabarboor (Amman). I could not determine the species from the dry remnants of the two female spiders inside those nests.

On August 10th, I went to visit the Shaumari Wildlife Reserve near Azraq Oasis (about 36 49 E, 31 48 N), and about 120 km from Amman, where I could find three females and two juveniles of *Stegodyphus lineatus* (Latreille) 1817 on green coniferous trees at height of 20-150 cm from the ground. The adult females have the two longitudinal black bands covering most of the abdomen dorsally.

According to O.P.-Cambridge (1872) (General list of the spiders of Palestine and Syria, with descriptions of numerous new species and characters of two new genera. Proc.zool.Soc.Lond., pp. 212-354) p. 260, this species (called *Eresus acanthophilus* Duf. by Cambridge) is found abundantly "at various places in Palestine". But, as I know it is the first record of *S. lineatus* from Jordan.

Hisham K. El-Mennawy

New records of
Stegodyphus dufouri (Audouin) 1825
(Araneida : Eresidae) from Egypt

Six new localities are recorded here for the first time, where *Stegodyphus dufouri* (Audouin) 1825 specimens were collected. Each locality is mentioned with the governorate name, the date of collection, the collector name, the number of specimens, and any observations recorded.

1. Kafr El-Sheikh Khalil - El-Menoufeia (about 30 36 N, 30 56 E)
28.1.1983 Hisham K. El-Hennawy
1 ♀ (with her spiderlings in her closed nest found, attached to a door, on the roof of my grandfather's home)
2. El-Manshia, near Kom Ombo - Asswan (about 24 26 N, 33 00 E)
June 1983 Hasan H. Fadl
4 ♀♀, 4 juveniles (on a fence)
3. Kom Osheem - El-Fayum (about 29 33 N, 30 55 E)
a- 9.11.1984 Hisham K. El-Hennawy
3 ♀♀, 1 juv., 9 newly hatched spiderlings (found in their closed nest with their mother, collected)
(found on Tarf shrubs, *Tamarix* sp.)
b- 18.7.1986 Hisham K. El-Hennawy
3 ♀♀, 3 juv. (a whitish variety of *S. dufouri*; their nests were on Tarf shrubs and other plants at 50-120 cm from the sandy ground)
4. Wadi Gharandal - Southern Sinai (about 29 21 N, 33 10 E)
26.9.1985 Mohamed El-Sayed
2 ♀♀ (on a house wall, by the way to St. Katharina)
5. Port Said - Port Said (about 31 16 N, 32 18 E)
25.10.1985 Hisham K. El-Hennawy
1 ♀ (on the outer wall of a building)
6. El-Bawitti - EL-Baharia Oases (about 28 18 N, 28 51 E)
a- 22-25.4.1986 Hasan H. Fadl
1 sub ♀ (on plants)
b- 1-3.10.1986 Hasan H. Fadl
1 juv.(?) (on plants) (40 km from El-Bawitti)

Hisham K. El-Hennawy

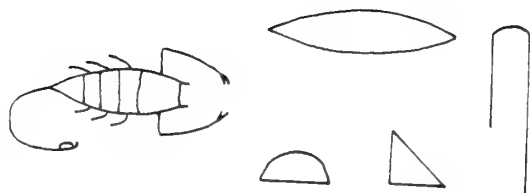
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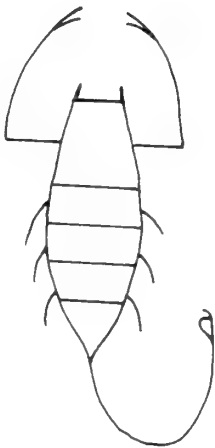
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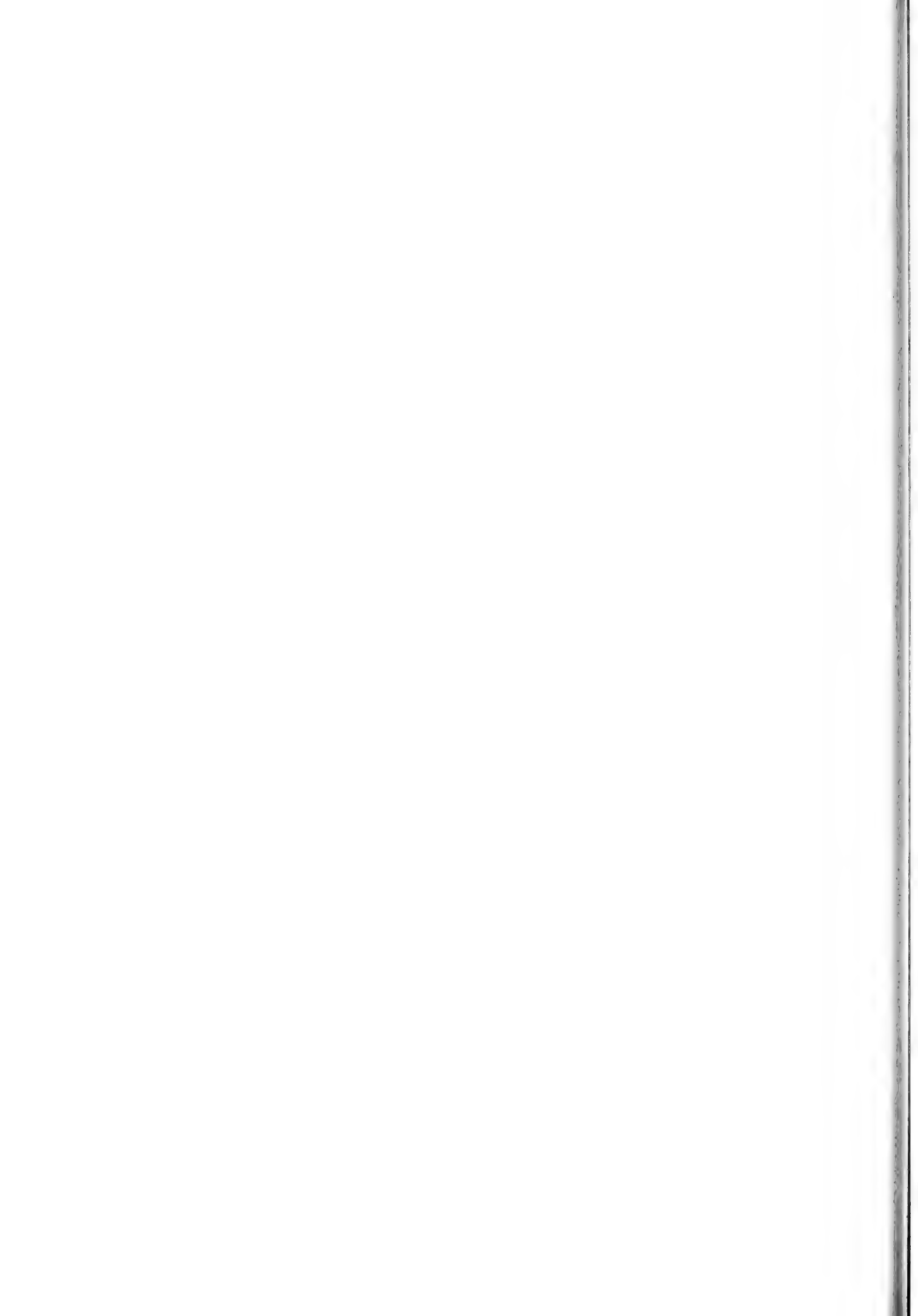
SERKET

سرکت



Volume 1
Part 2

Cairo , Egypt
1988



PREFACE

Seven months ago, the first issue of SERKET had been published and circulated to most arachnological societies and spider clubs all over the world. Also, it was circulated to friends and colleagues who are interested in obtaining new arachnological publications.

The responses towards the first issue are encouraging, specially the letters of my friends Drs. James C. Cokendolpher (USA), Robert R. Jackson (NZ), John R. Parker (UK), and Rick West (Canada). Among these letters, the letter of the President of the British Arachnological Society, John Rowland Parker, who said " I think it is a very good start and any errors in the English are only minor ones. I hope it will develop into a useful Bulletin to cover arachnological interests, not just in your own country but perhaps for the Middle East as well.". James Cokendolpher added in his letter "... you may wish to expand the coverage of Serket to include all of North Africa and the Middle East.".

Really, I am very grateful to all friends and colleagues who sent me writing about SERKET. I will do my best to develop this bulletin to realize all the good ideas of the friends and my own dreams too.

In next issues, there will be standard sections in the bulletin : Spiders of Egypt, Scorpions of Egypt, Arachnida in language and literature, as well as Records.

I hope this second issue will be interesting to the readers. I hope too, to receive their evaluation of the published works and their works for publication.

Subscription will be determined before the end of the first volume which will be consisted of five parts of about 100 pages.

Correspondence concerning subscription, exchange, publication, etc. should be addressed to the editor.

The Editor



Feeding and feeding apparatus of
Chaetopelma shabati Hassan, 1950

A.I.Hassan, Ph.D.*

Introduction

Chaetopelma shabati Hassan, 1950, like other spiders, comes from an ancestral line that never acquired organs for mastication, and even today they have no true jaws. The bases of their appendages are provided with strong spiny distal processes, but the latter do not meet along the middle line of the body. So they are forced to depend completely upon the liquids that could be obtained from the mud or from the prey.

The feeding mechanism, in spiders and other arachnids, should be carried out by means of external feeding organs away from the mouth cavity, and by a sucking apparatus. All spiders are carnivorous; they have to choose the kind of prey from which they can obtain their favourable liquid diet. Accordingly, they are provided with special organs which help in catching and killing the prey. The body of the prey has to be crushed and mingled into a mass which can be easily changed into a liquid diet. The spiders have certain means to carry on an external partial digestion. These means and also the external feeding organs have been studied in many spiders by various authors.

Chaetopelma shabati, being one of the large spiders in Egypt, was previously described by the author (1950) with regards to its morphology. To add to the knowledge of this spider, this present work has been carried out to study its food preference and feeding apparatus.

Food Preference

C.shabati is commonly found in Egypt crouching in dark and damp places in old houses, old wells, lavatories and dampy ruins. These places are abundantly inhabited by various kinds of insects and small animals such as flies, beetles and worms, other than cockroaches and mice. Hence, it is assumed that such animals can be considered to form the main sources of food for this spider. To detect which kind of prey these spiders prefer, they were supplied with samples of these

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N. This paper had been written almost in 1953.

animals while in captivity. The experiments of food preference were carried out during the summer from May to August.

Flies and beetles : Not in a single instance C.shabati was observed catching flies. This could be correlated to the alertness of the insect and also to the spider being unable to construct a web. It should be mentioned that this spider builds a snare which is a sort of a loose sheet of silk.

The beetles which were of different kinds and sizes were not attacked by the spider. Even the latter ran away from them and never got near these insects whatever hungry it was.

Larvae and worms : Larvae of flies, butterflies and moths, in addition to earthworms were chosen for the experiments of food preference of C.shabati. Eleven larvae of the flesh fly (Sarcophaga sp.), two larvae of the white cabbage butterfly (Pieris rapae), one larva of the clover-worm moth (Agrotis ipsilon) and three earthworms (Allolobophora caliginosa) were placed in a cage containing two males and three females of C.shabati. These different kinds of larvae and worms are assumed to be found in the vicinity of the dampy ruins and places where the spider lurks. They may come in its way when it leaves its hiding place at night for search of food. The fly larvae were not devoured; that perhaps was due to their small size. The caterpillars of the butterfly and the moth were not noticed at first by the spiders. But when it happened that the caterpillar of the moth got near to the pedipalps of one of the female spiders, the latter took few steps backwards while the larva was still creeping along without changing its direction. Suddenly the female spider jumped at its back, pierced the body with its fangs. The larva gave a sharp curl, and stood still for about ten minutes, while the spider did not show any movement. After that period the larva struggled by twisting its body from side to side to get rid of the fangs of the attacking spider. This struggle continued for about five minutes and then the larva ceased moving. A similar struggle occurred between another female spider and one of the butterfly larvae. Following the collapse of the prey, each of the two mentioned spiders started to crush the body of the caterpillar by means of its chelicerae. In about eighty minutes the larva was converted into a moistened lump between the chelicerae. During that process an outflow and an inflow of liquid were observed running through the mouth of the spider, and the cephalothorax was working in a pumping action. The second butterfly larva was still crawling over the floor of the cage without being attacked by the other spiders. In the next day there was nothing left of all the caterpillars. The three earthworms were not attacked and observed alive.

Mice : Chaetopelma spider, kept in captivity for about ten days without being fed, was supplied with a young mouse of about twelve centimetres from head to tail. The mouse was walking sluggishly in the cage, while the spider was always facing it with signs of restlessness. After a while, the mouse stopped at one of the corners while the spider stood still for about five minutes with all the legs stretched. Then the latter stepped forward towards the mouse with its pedipalps raised in front for an angle of about 45° . When it became near the side of the mouse at a distance of about eight centimetres, it stooped taking a special attitude. The legs were slightly bent at the femur-patella joints, and the pedipalps raised a little from the surface. The mouse did not move during that approach, but when it started to do so, the spider suddenly jumped over its back trying to get hold of its body by means of the legs but the mouse slipped away and the spider never tried to chase or attack it again. The mouse stood in one of the lower corners of the cage and the spider crouched in a high corner. There was no attack in the following five days, after which period the spider was found dead on the floor of the cage.

Another spider was put in the mentioned cage in which the mouse was still there. The cage was kept in a dark place. The spider moved quickly all around the cage, and when it touched the mouse with its pedipalps, the latter ran away. The spider stood still for some time, but it began to chase the mouse. Finally, it succeeded to get hold of it. The spider shot at the back of the mouse, inserted its fangs in the anterior part of the trunk behind the fore-legs. It crouched over the mouse holding it with its legs except the third pair which was resting on the floor of the cage. The mouse screamed and struggled to get rid of the attacking spider, but that was in vain. Then the mouse was gradually losing strength and finally after a period of one hour and a half it was motionless. It is worth mentioning that the spider left the dead mouse to drop on the floor and did not try to feed on it. It may be explained that the attack of the mouse by the spider was not for the purpose of obtaining food, but it might be due to the excitement of the latter being transferred from one cage to another.

Cockroaches : A spider, kept in captivity for about seven days, was given a nymph of Periplaneta americana in its last instar. The spider ran away from the cockroach at the beginning, while the latter was running haphazardly in the cage holding its antennae backward. After about three minutes the spider and the cockroach stood still facing each other. The cockroach was still holding its antennae backward, while the spider was raising its

pedipalps forward and its legs were bent at the femur-patella joints. After a short while the cockroach moved a little towards the spider. At that moment the latter shot at its back and got hold of it by the legs, pushing its fangs in the thoracic segments at the region of the second coxae. The cockroach struggled vigorously using its legs to get rid of the attacking spider, but the legs were kicking in the air. Its mandibles were working actively but they could not get hold of any part of the spider's body to bite it. Sometimes one of the pedipalps came near to the mandibles of the cockroach but the spider quickly drew it away.

The spider stood still, crouching over the prey with its fangs piercing the thorax. Not a slight movement was performed by the spider. No suction action was noticed at its cephalothorax or abdomen. No movement was done by the pedipalps or their bases. That state lasted for about half an hour, during which period the cockroach showed, from now and then, a kick by its hinder legs and a slight whipping action by the maxillary and labial palps. At the close of that time it was noticed that the second left leg of the cockroach dropped down as a result of the changing in position of the left fang of the spider. That happened as such: while the spider was still holding fast at the prey by its right fang, it raised the paturon (the basal segment) of the left chelicera, drew the fang outside the thorax of the cockroach and then pushed it again into a place a little in front of the first one. After a while it did the same with the right chelicera. The spider repeated that action for about twelve times, with an interval of about three minutes between the movement of one chelicera and that of the other. The cockroach did not show any sign of struggle or movement except slight kicks by its hind legs at varied intervals. The abdomen of the cockroach showed from now and then actions of swelling and depressing. The cockroach did not show any sign of motion after about two hours from the beginning of the attack.

The action of the two fangs went on quicker and quicker causing the hard chitin of the thorax to be crushed into pieces. The pedipalps moved in a peculiar way which might be the result of the work of the strong muscles of the chelicerae. During that crushing a large drop of liquid was observed coming out from the mouth and used in kneading the broken chitin and torn tissues into a mangled mass. Following that, a process of sucking the liquid was observed a minute after its flow from the mouth. That action was caused by the cephalothorax of the spider which was being raised slightly up and lowered down in a sort of pumping action, resulting in the outflow

and inflow of the liquid. That process went on without stopping for about three hours. At last the spider dropped a small chitinous black ball. Such was what left from the cockroach nymph, in addition to three legs which fell down during the feeding process.

After two days an adult cockroach was put in the cage of the same spider, but the latter did not pay any attention to it. The cockroach stood still at one of the corners and was found dead in the next day. A cockroach nymph in its third instar then put in the same cage. The spider did not attack it, but when the nymph got stuck to the snare of the spider, the latter tied it up with threads of silk and covered it completely. The spider never tried to eat it afterwards.

After about a week the same spider moved actively in the cage. An adult cockroach was given to it. At first the spider ran away from it, but finally attacked the cockroach and took hold of it at the thorax. The cockroach stopped struggling after about two hours. The head, wings, two legs and some chitinous fragments were the only parts left from the body of the cockroach in the next morning.

Nearly the same observations were obtained from experiments done with three males and four females. These spiders never touched dead cockroaches.

It is concluded from the above experiments that C.shabati attacks the cockroach, as well as other animals, only when it is alive and moving near by it. It takes about two hours to make the cockroach motionless and under control of the spider. This has been found to be the longest period compared to that of other animals. Such long period gives the impression that the spider does not inject a large quantity of its poison on the instant it inserts its fangs inside the thorax of the prey. The amount of poison injected often depends upon the degree of irritation to which the spider is subjected; as it is noticed that if the prey shows much struggle it will die in a shorter time. In such a case the spider will inject more poison in the body to assure quicker death. This is proved by the experiments done with the caterpillars which become motionless after about a quarter of an hour. The death of the mouse which is larger than the cockroach occurs after a time shorter than that acquired by the latter.

The mechanical treatment of the prey is done entirely by the chelicerae as Kästner (1937) had stated. The short projections on the pedipalp coxae take no part in the process of crushing the body of the prey. The denticles on the lateral projecting lobes of the rostrum may help in it. The hairs on

the pedipalp coxae, rostrum and labium serve as a sieve to prevent fragments of chitin to pass into the mouth.

The external digestion is carried out by a powerful digestive fluid which is charged mainly through the mouth of the spider. This is proved by the large drop of liquid that outflows from the mouth as a result of the pumping action of the cephalothorax. The secretion of the rostral and maxillary glands, which are well developed in Chaetopelma, help in this process as in the other kinds of spiders.

Cockroaches proved to be the preferable food for Chaetopelma shabati. They are enormously found in its lurking places. One meal will suffice the spider for about ten to twelve days.

Feeding Apparatus

The organs of the spider that take part in the feeding mechanism are the chelicerae and the poison glands found in them, the pedipalps, the mouth parts and the pharynx which leads to the oesophagus and the sucking stomach. These different organs are well represented in C.shabati.

The chelicerae and the poison glands : The author (1950) had described the chelicerae (fig.1, ch) as being powerful, parallel to the long axis of the body. The paturon is stout, one and half times as long as the fang, blackish in colour and covered with brown hairs and bristles. Its ventral surface is fringed with reddish long bristles, and carries twelve short stout teeth beside which the fang bites. The fang is conical in shape. It turns backwards below the large paturon. It works in a vertical plane parallel to the long axis of the paturon. It is worked by two bundles of muscle fibres (fig.2). One of them is connected to the dorsal edge of its base and passes to the proximal dorsal surface of the paturon. This is the extensor muscle (ex.m.). The other bundle of the muscle fibres passes from the lower edge of the base of the fang to the dorsal and posterior surfaces of the paturon. It is the flexor muscle (fl.m.). The insertion of the fang inside the body of the prey is due to the vigorous action of these powerful muscles.

The poison gland is a cylindrical long sac (fig.2, ps.g.) enclosed entirely in the paturon near its upper surface between the muscles that work the fang. It is surrounded by striated muscle fibres branching from the flexor muscle which passes obliquely over it. The poison duct (ps.d.) starts from the gland at the base of the fang through which it passes and opens near its apex on the convex dorsal surface (ps.op.).

The pedipalps : The pedipalps (fig.3) resemble the legs in colour and covering of hairs and bristles. They are shorter than the legs, as they are composed of six segments, the metatarsal segments being absent. The tarsus (fig.4) ends with two lobe-like tufts of squamous hairs, hiding between them a small claw-like extension which is not easily detected in the notch between the two tufts from the dorsal surface. It is called the pretarsus (fig.6, ptr.). It is black in colour. It arises at the tip of the tarsus which is deeply depressed. In this depression (fig.5) there are two oval concavities (cv.) from which rise the tufts of hairs. Between them there is a small triangular concavity (jn.) which is the place of junction of the pretarsus to the tarsus. In the female the tarsus (fig.4) is a normal segment, nearly as long as the tibia. It is covered with brown hairs and black bristles like the other segments. There is no velvety pad on its ventral surface like that in Eurypelma. In the male the tarsus (figs.3&6, tr.) is very short ending with the two tufts of hairs. It carries the palpal organ which is not a modified and specialised pretarsal segment differing from what Barrows (1925) has shown in Atypus. There are two bundles of muscle fibres passing in the tarsus and are mainly connected to the pretarsus. The extensor muscle (ex.m.) rises in the tarsus, while the flexor one (fl.m.) passes to the tibia and patella. There are branches issuing from these muscles and are attached to the base of the palpal organ. This proves that the palpal organ is not a modified pretarsal segment.

The pedipalp coxae (figs.3&7, cx.) are connected to the sternum like the coxae of the legs, but they are directed forwards on each side of the labium. They are also connected to the carapace of the cephalothorax by membranous conjunctiva. They are covered with long brown hairs and black bristles specially on the inner side. In Chaetopelma, like most of Mygalomorphae, the pedipalp coxa has a small projection (fig.7, pj.) on its inner side at the proximal end beside the base of the trochanter. This small projection is not comparable with the maxillae of the other spiders which are conspicuous jaw-like lobes. There is a curved spur at the outer distal corner of the coxa (figs.3&7, sp.). There is also such a spur at the distal corner of the trochanter on the outer side.

The maxillary glands (fig.7, mx.g.) are multicellular alveolar organs. They are distributed in the coxae specially along the inner edges where they form globular masses. They open on the small inner projections in a more or less definite row.

The mouth parts : The mouth is a transverse narrow slit at the lower edge

of the clypeus which falls vertically downwards from the anterior edge of the carapace. The wall of the clypeus projects in the form of a large lobe, the rostrum. The mouth opening is bound ventrally by the labium which is a small plate attached to the sternum and extending between the coxae of the two pedipalps. The mouth opening leads to a narrow buccal cavity and then to the pharynx. The buccal cavity is sometimes called by some authors the preoral cavity.

The rostrum : It is sometimes known as the labrum. It is a more or less a conical lobe (figs.1,8&12, rs.). Its dorsal part is loose. Its apex is directed upwards and then bent downwards into a curved beak. Near this apex there are two lateral swellings (fig.9, l.s.) from each of which is extending a short chitinous tendon (t.). There is a ligament (l.) which is attached to the tendon and fastens the rostrum to the base of the pedipalp coxae. The lateral sides of the rostrum are concave, strengthened by thin chitinous sclerites. The base of the rostrum is curved and forms the upper edge of the mouth opening. It fits snugly into the concavity of the labium. At each corner of the base there is a large projecting lobe (l.p.lb.) covered with long red hairs and fine denticles. There are several tiny pores between these denticles. The central part of the rostrum swells outwards like a belly and is thickly covered with long red hairs. Inside the rostrum there are two bundles of transverse muscle fibres (fig.12, tr.m.).

There is a pair of rostral glands (fig.12, rs.g.) distributed in the rostrum. They are multicellular. They open to the outside by tiny pores among the denticles on the lateral projecting lobes.

The labium : The labium (figs.1,8&12, lb.) is a loose chitinous free plate which is loosely attached to the sternum. It is wider than long. Its free edge is fringed with long red hairs like those found on the rostrum. Its upper surface is concave and receives the base of the rostrum. Its anterior upper edge is raised to fit against the part of the ventral edge of the rostrum that lies between the two lateral projecting lobes.

The pharynx : The mouth opening leads to the pharynx through a narrow buccal cavity between the rostrum and the labium. The pharynx (figs.8&12, ph.) runs steeply upwards behind the rostrum. Its upper end leads to the oesophagus (fig.12, oe.) which dips downwards and then runs backwards to open in the sucking stomach.

The walls of the pharynx are strengthened by a dorsal and a ventral plate. They are united along their lateral edges by membranous conjunctiva. The dorsal plate, or epipharynx (fig.12, ep.) is convex and strongly scler-

rotized. It is continued from the under surface of the rostrum. It is composed of a high elongated median lobe (md.), with two lateral lobes (lt.) at its sides. The middle lobe is deeply incised at its upper end. There is a median thin sclerite extending all along its central region to its lower end. This thin sclerite is also incised at its upper end. Traversing the middle lobe from the edge of the rostrum is a median channel (chn.) with strongly sclerotized walls. At its upper end the channel is widened before the mouth of the oesophagus. At its lower end it tapers to a narrow slit ending shortly before the ventral edge of the rostrum. The lateral lobes are oval in shape with somewhat tapered upper end. They are horizontally striated. There is a large dilator muscle (fig.12, dl.m.) which originates from the wall of the rostrum and is connected to its upper end.

The ventral plate, or hypopharynx (fig.12, hp.) is concave. It is relatively weaker but longer than the epipharynx, because the edge of the labium extends beyond the rostrum. It is consisted of a low median lobe (md.) and two lateral lobes (lt.). At the centre of the median lobe there is a longitudinal thin sclerite which is deeply forked at its upper end. The bifurcation reaches to the middle of the sclerite. Its lower end which is connected to the labium is extended laterally and is connected to the lower edges of the lateral weak sclerites that strengthen the lateral lobes. The central sclerite is provided with a central channel which makes a tube with the epipharyngeal central channel when the dorsal and ventral plates are applied together during the suction of the liquid food.

References

- Barrows, W.M. 1925: Modification and development of the arachnid palpal claw, with a special reference to spiders.
Ann.Ent.Soc.America, 18: 483-516, pls.35-43.
- Bertkau, P. 1885: Über den Verdauungsapparat der Spinnen.
Archiv Mikr.Anat., 24: 398-451, pls.20, 21.
- Gerhardt, U. & Kästner, A. 1937: Araneae=Echte Spinnen=Webspinnen.
In: Kükenthal und Krumbach, Handb.Zool., 3(2): 394-656, figs.484-854.
- Hassan, A.I. 1950: The Theraphosidae in Egypt with a description of *Chaetopelma shabati*, spec.nov.
Bull.Soc.Fouad 1er Entom., 34: 159-171, 10 figs.
- Millot, J. 1931: Les glands venimeuses des araneides.
Ann.Sci.Nat., ser.10, Zool., 14: 113-147, 23 figs.
- Petrunkévitch, A. 1933: An inquiry into the natural classification of spiders, based on a study of their internal anatomy.
Trans.Con.Acad.Arts Sci., 31: 299-389, 13 pls.

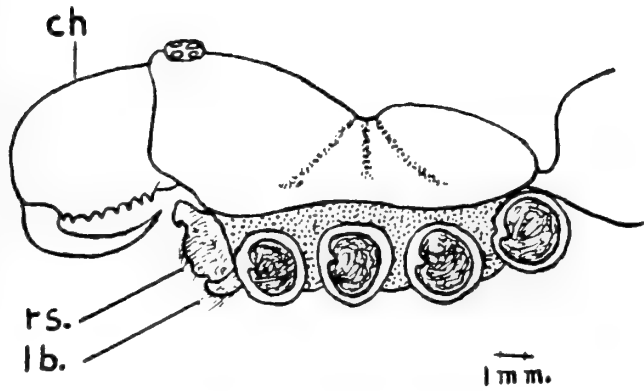


fig. 1.

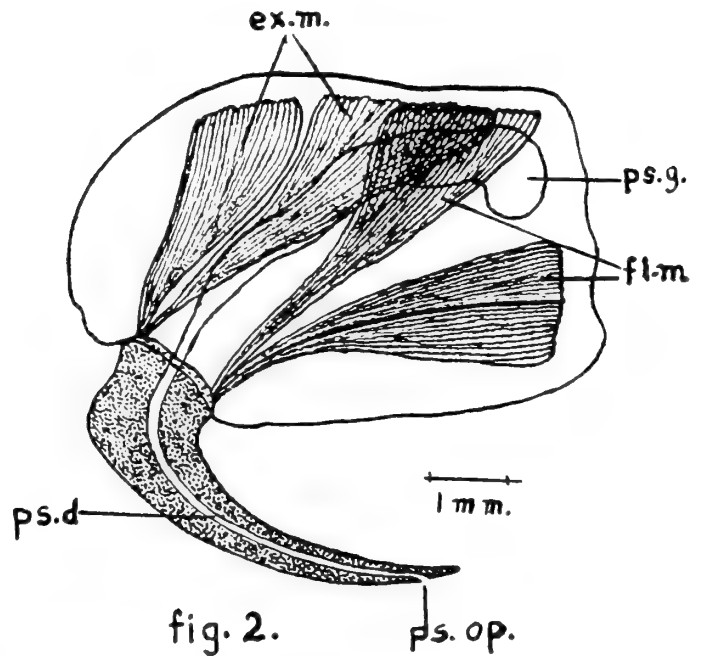


fig. 2.

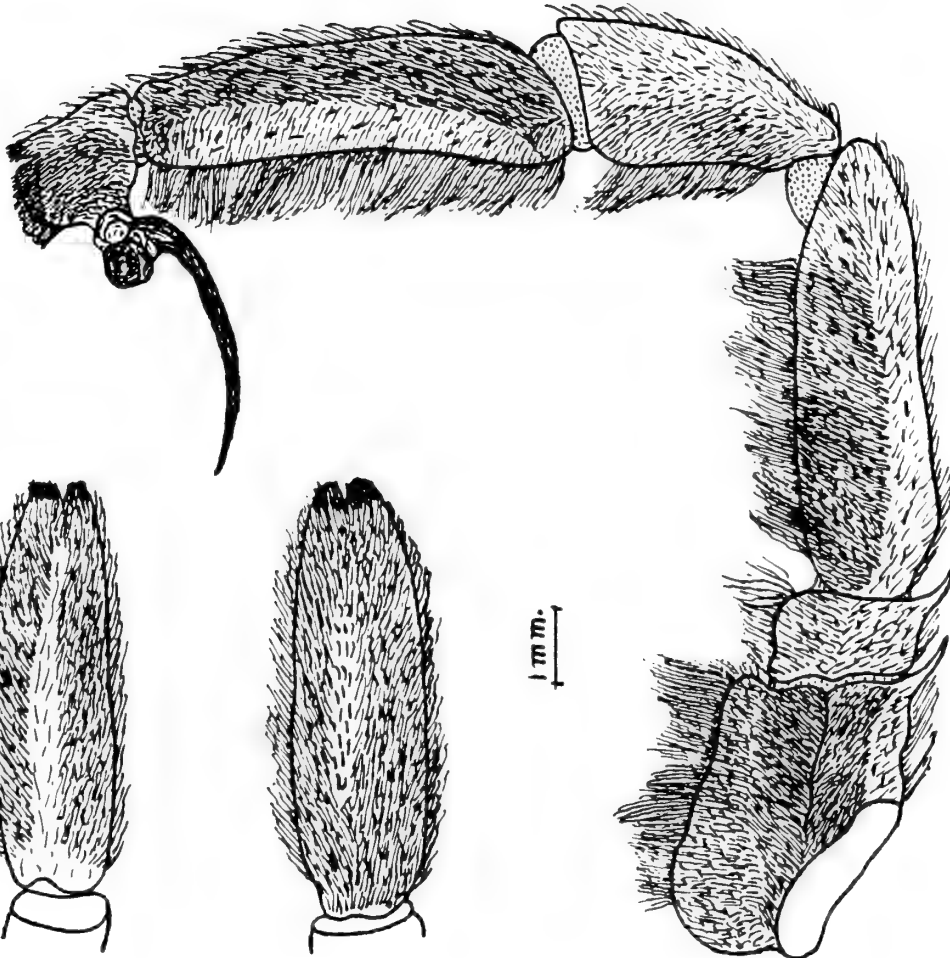


fig. 3.

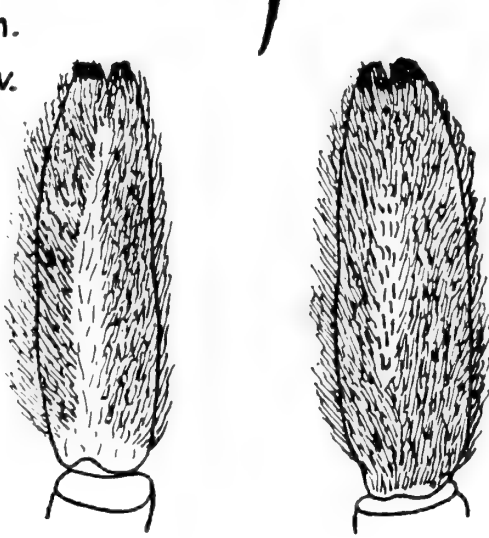


fig. 4. a. b.

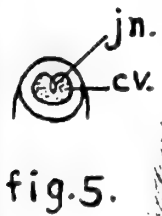


fig. 5.

Figs. 1-5. 1. Cephalothorax, lateral view. 2. Chelicera, longitudinal section. 3. Pedipalp of male. 4. Tarsus of female pedipalp; a. dorsal view, b. ventral view. 5. Tarsus, front view of apex.

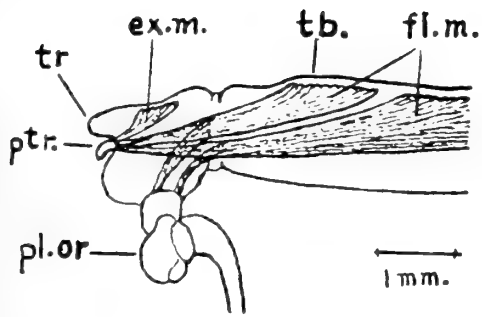


fig. 6.

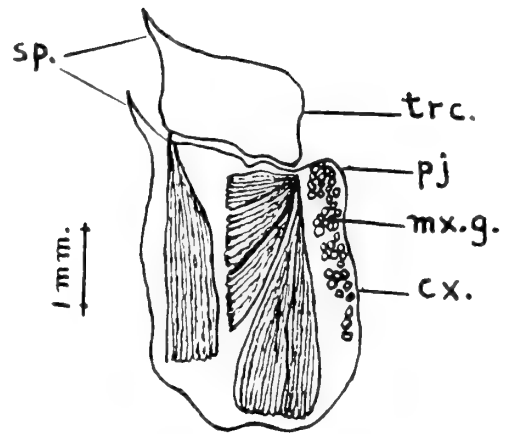


fig. 7.

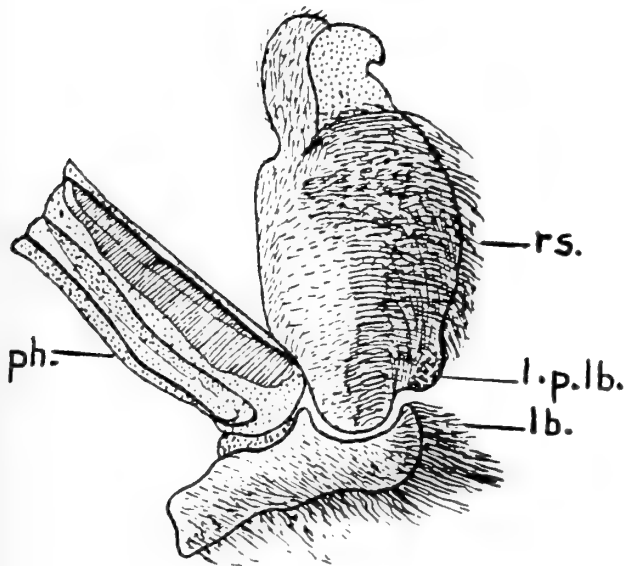


fig. 8.

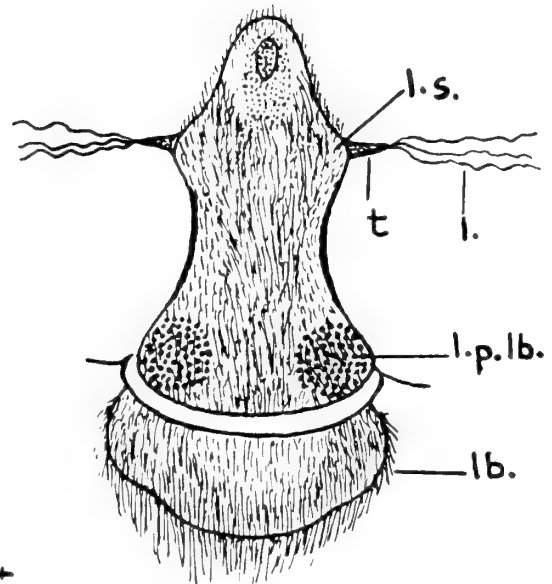


fig. 9.

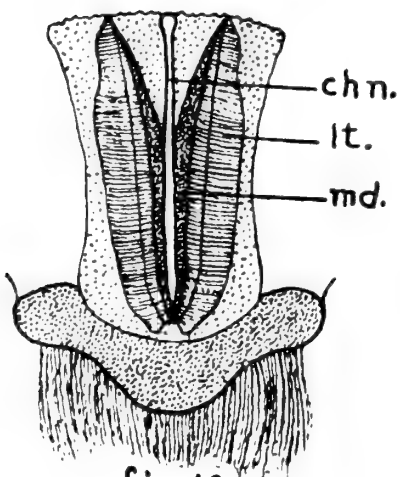


fig. 10.

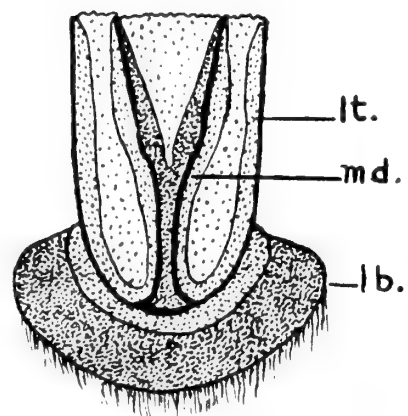


fig. 11.

Figs. 6-11. 6. Tarsus and palpal organ, longitudinal section. 7. Pedipalp coxa, longitudinal section. 8. Rostrum, labium and pharynx, lateral view. 9. Rostrum, front view. 10. Epipharynx, dorsal view. 11. Hypopharynx, ventral view.

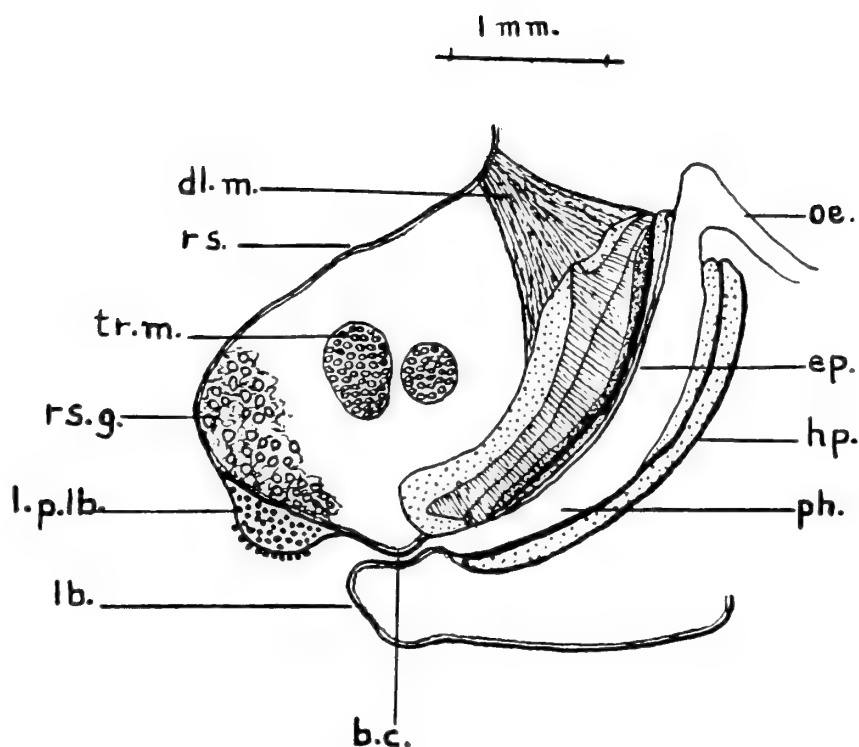


fig.12.

Fig.12.Rostrum, labium and pharynx, longitudinal section.

Abbreviations:

b.c. buccal cavity; ch. chelicera; chn. central channel; cv. concavity for the tuft of hairs; cx. coxa; dl.m. dilator muscle; ep. epipharynx; ex.m. extensor muscle; fl.m. flexor muscle; hp. hypopharynx; jn. place of junction of pretarsus to tarsus; l. ligament; lb. labium; l.p.lb. lateral projecting lobe; l.s. lateral swelling; lt. lateral lobe; md. median lobe; mx.g. maxillary glands; oe. oesophagus; ph. pharynx; pj. inner projection of the pedipalp coxa; pl.or. palpal organ; ps.d. poison duct; ps.g. poison gland; ps.op. opening of poison duct; ptr. pretarsus; rs. rostrum; rs.g. rostral glands; sp. spur; t. tendon; tb. tibia; tr. tarsus; trc. trochanter; tr.m. transverse muscle.

Scorpions of Jordan

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Introduction

The aim of this paper is to introduce a list of the scorpion species recorded from Jordan with a simplified key to those species and a distribution map of them. This work is prepared as a preliminary aid to any researcher would like to study scorpions in Jordan, whatever is the kind of study (systematics, ecology, ethology, scorpionism, etc.).

This work depends upon records mentioned in different references, preserved specimens in collections and a few specimens collected by the author. Twenty two years ago, Prof. Vachon (1966) recorded 5 species of scorpions from Jordan. After ten years, Dr. Wahbeh (1976) added one more species with a good distribution map of the scorpions of Jordan. Four years later, Levy and Amitai (1980) added two more species to the list. After more four years, Prof. Kinzelbach (1984) recorded 8 species from Jordan; three of them were recorded for the first time. In 1985, in his excellent distribution map of scorpions in the Middle East, Prof. Kinzelbach declared the distribution of 11 species in Jordan with the possibility of the presence of another species. My own records which were not published before are mentioned here followed by the year of recording. The locations mentioned in the distribution section and map are named after the map of the Hashemite Kingdom of Jordan printed at the Ministry of Tourism Press, Amman (1986), except Umm Kuttane (Wahbeh, 1976) and Wadi Deba' (Levy and Amitai, 1980). The different records are arranged according to their dates and the locations are arranged alphabetically within each record. The subspecific rank is excluded in this study except in one case. The key to species is based mainly upon my key to Egyptian scorpion species (1987) and the work of Levy and Amitai (1980).

I hope this study will be a start point for more detailed studies of scorpions in Jordan. I would like to express my sincere appreciation to everyone who helped me in this study. My special thanks are due to Dr. Yahya Wahbeh and his pioneering work on Jordanian scorpions, and to Miss Rola Qumei who brought to me my only *Buthotus* specimen with a new record of it from Amman.

List of Species

Order SCORPIONIDA

Family Buthidae Simon, 1879

Genus Androctonus Hemprich & Ehrenberg, 1829

1. Androctonus amoreuxi (Audouin, 1825)
2. A. bicolor Hemprich & Ehrenberg, 1829
3. A. crassicauda (Olivier, 1807)

Genus Buthacus Birula, 1908

4. Buthacus leptochelys (Hemprich & Ehrenberg, 1829)

Genus Buthotus Vachon, 1949

5. Buthotus judaicus (Simon, 1872)

Genus Buthus Leach, 1815

6. Buthus occitanus (Amoreux, 1789)

Genus Compsobuthus Vachon, 1949

7. Compsobuthus acutecarinatus (Simon, 1882)

(Subspecies: C.a.jordanensis Levy, Amitai & Shulov, 1973)

8. C. werner (Birula, 1908)

Genus Leiurus Hemprich & Ehrenberg, 1829

9. Leiurus quinquestriatus Hemprich & Ehrenberg, 1829

Genus Orthochirus Karsch, 1891

10. Orthochirus innesi Simon, 1910

Family Diplocentridae Pocock, 1893


Genus Nebo Simon, 1878

11. Nebo hierichonticus (Simon, 1872)

Family Scorpionidae Pocock, 1893

Genus Scorpio Linnaeus, 1758

12. Scorpio maurus Linnaeus, 1758


Key to SpeciesA - Sternum : pentagonal 1. Stinger (telson): with subaculear tubercle 

Family Diplocentridae

1. Nebo hierichonticus

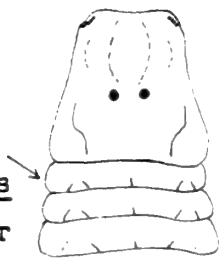
- . - - - - - : without subaculear tubercle

Family Scorpionidae

2. Scorpio maurusB - Sternum : triangular 

Family Buthidae

2. Mesosoma : anterior tergites (1st & 2nd): with five crests

3. Leiurus quinquestriatus - . - - - - - : - - - - - : with three crests or
without crests

3. Mesosoma : tergal crests : distinct

- . - - - - - : - - - - - : indistinct or absent

4. Prosoma : median crests : united forming a straight line

Mesosoma : tergal crests : posteriorly attenuated

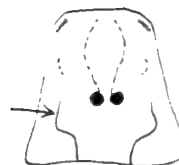
Genus Compsobuthus a. Pedipalp : movable finger : series of denticles : without external
accessory denticleMetasoma : 4th segment : intermediary crests : present 4. Compsobuthus acutecarinatusjordanensis- . - - - - - : - - - - - : - - - - - : with an accessory
denticle- - - - - : - - - - - : - - - - - : absent (or with an
indistinct line)5. Compsobuthus wernerl

- . - - - - - : - - - - - : not forming a straight line

- - - - - : - - - - - : not projecting posteriorly

5. Prosoma : with a lyra-shaped () united crests

6. Buthus occitanus



-. ----- : crests not forming a lyra shape

6. Walking legs : sole of tarsi : with spines



7. Buthotus judaicus

-. ----- : ----- : with hairs or bristles



Genus Androctonus

a. Metasoma : 3rd segment : longer than wide

8. Androctonus amoreuxi

-. ----- : ----- : wider than long

b. Pedipalp : hand : slender

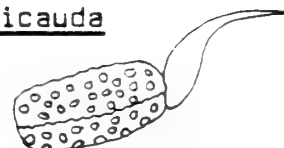
9. Androctonus bicolor

-. ----- : ---- : broad and stout

10. Androctonus crassicauda

7. Prosoma : without crests but with deep depressions

Metasoma : posterior segments : with small depressions



11. Orthochirus innesi

-. ----- : smooth

----- : ----- : without small depressions

12. Buthacus leptochelys

.....

Distribution

1. Androctonus amoreuxi

- Kinzelbach (1985)

- in the north-western part of Jordan, west of Amman (a small area).

(I do not know if there is any record of this species from Jordan. But it may be found in Jordan.)

2. Androctonus bicolor

- Kinzelbach (1984)*

- Aqaba, wadi east of the Marine Biological Station;
- Aqaba, camp at the sea, 14 km south of the city;
- Petra.

- Kinzelbach (1985)

- in the north-western part of Jordan, west of Amman (a small area).

3. Androctonus crassicauda

- Vachon (1966)
- Wabneh (1976)
- Levy & Amitai (1980)
- Kinzelbach (1985)
- El-Hennawy, 1987
- Amman; Aqaba; Irbid; Mafraq; Wadi Rum; Zarqa.
- Amman, Qasr Amra (records from BM(NH)**); Petra.
- all the country.
- a dry specimen in the collection of Shaumari Wildlife Reserve near Azraq.

4. Buthacus leptochelys

- Levy & Amitai (1980)
- Kinzelbach (1984)*
- Kinzelbach (1985)
- Wadi Deba' ? (100 km southeast of Amman).
- Wadi Rum, 3 km north of Rum (Feb. 1977).
- all the country.

5. Buthotus judaicus

- Vachon (1966)
- Wabneh (1976)
- Levy & Amitai (1980)
- Kinzelbach (1984)*
- Kinzelbach (1985)
- El-Hennawy, 1987
- Irbid; Salt.
- Jerash and its vicinity.
- Jerash.
- in the north-western part of Jordan, west of Amman (a small area).
- Amman, a specimen brought to me from Marka, north-east of Amman, by Miss Rola Qumei (Sept. 1987).

6. Buthus occitanus

- Kinzelbach (1984)*
- Kinzelbach (1985)
- Wadi Rum (Aug. 1974); desert highway, 65 km north-east of Aqaba.
- in the south-western part of Jordan, near Aqaba (a small area).

7. Compsobuthus acutecarinatus jordanensis

- Levy & Amitai (1980)
- Kinzelbach (1985)
- east of Aqaba (about 25 km); east of the dead sea (west of Qatrana at Wadi El-Mujib).

8. Compsobuthus werner

- Kinzelbach (1984)*
- Kinzelbach (1985)
- Petra; Wadi El-Hasa, King's highway; Zarqa Ma'in, hot springs.
- C.w. judaicus (Birula, 1905): west side of the country, west of 37°E.

- El-Hennawy, 1986
- Amman, one specimen collected at Abdoun (south-west of Amman), and three specimens collected at Tabarboor (north-east of Amman) (coll.: Aug. 1986, by the author).
- El-Hennawy, 1987
- a dry specimen in the collection of Shaumari Wildlife Reserve near Azraq (coll.: June 1982, by Mr. Jad El-Yunes);
- a specimen collected from Wadi Shueib by Mr. Mohamed El-Abbad (coll.: May 1987).

9. Leilurus quinquestriatus

- Vachon (1966)
- Wahbeh (1976)
- Azraq; Dhiban; Jerash; Karak; Ma'an; Madaba; Mafraq; Qatrana; Salt; Shobak; Tafila; Umm Kuttane; Wadi Musa.
- Levy & Amitai (1980)
- Mafraq; Petra (a record from Muséum National d'Histoire Naturelle, Paris); Wadi Deba' ? (100 km southeast of Amman).
- Kinzelbach (1984)*
- Aqaba, 10 km south of the city;
- Aqaba, wadi east of the Marine Biological Station;
- 3 km east of Mount Nebo; Petra;
- Wadi Musa, in a building (Aug. 1975);
- Wadi El-Hasa, King's highway;
- Wadi El-Mujib, King's highway;
- Wadi Rum, 3 km north of Rum.
- Kinzelbach (1985)
- west side of the country, west of 37°E.
- El-Hennawy, 1987
- two alive specimens, collected from Azraq and kept in Shaumari Wildlife Reserve (June 1987);
- 15 specimens, collected from Wadi Shueib by Mr. Mohamed El-Abbad (May 1987).

10. Orthochirus innesi

- Wahbeh (1976)
- Madaba; Qatrana.
- Levy & Amitai (1980)
- O. scrobiculosus (Grube, 1873): near Amman (a record from Hebrew University, Jerusalem); Qasr Amra (a record from BM(NH)**).
- Kinzelbach (1985)
- all the country.

11. Nebo hierichonticus

- Vachon (1966)
- Wahbeh (1976) - Karak; Madaba.
- Levy & Amitai (1980) - Amman; Petra (a record from BM(NH)**).
- Kinzelbach (1984)* - Petra; Wadi El-Hasa, King's highway;
- Zarqa Ma'in, hot springs.
- Kinzelbach (1985) - west side of the country, west of 36°30'E.

12. Scorpio maurus

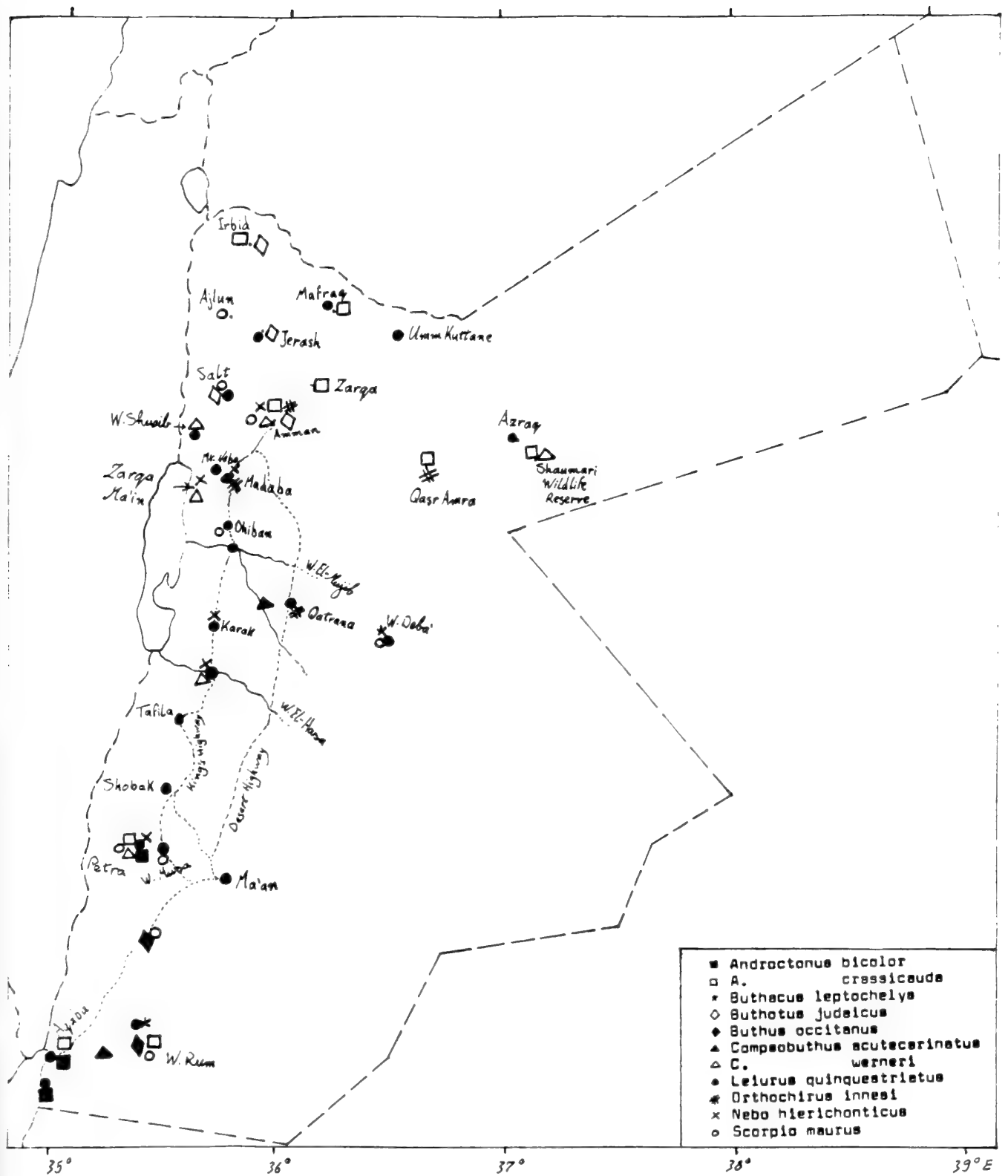
- Vachon (1966)
- Wahbeh (1976) - Ajlun; Amman; Dhiban; Wadi Musa.
- Levy & Amitai (1980) - Salt; Wadi Deba' ? (100 km southeast of Amman).
- Kinzelbach (1984)* - desert highway, 65 km north-east of Aqaba;
- Petra; Wadi Rum (Aug. 1974).
- El-Hennawy, 1984 - Amman, one specimen collected at Abdoun (south-
- west of Amman) (coll.: Oct. 1984, by the author).
- Kinzelbach (1985) - all the country (three subspecies).

* Kinzelbach (1984) : all the specimens were collected in March 1977 unless another date is mentioned after the record.

** BM(NH) = British Museum (Natural History), London.

References

- El-Hennawy, H.K. 1987 : A simplified key to Egyptian scorpion species (Arachnida : Scorpionida). SERKET (1987) vol.1(1): 15-17.
- Jordan Ministry of Information, Ministry of Tourism and Antiquities and Jordan National Geographic Center 1982 : The Hashemite Kingdom of Jordan (a map). Printed at the Ministry of Tourism Press, Amman - Jordan, 1986.
- Kinzelbach, R. 1984 : Die Skorpionssammlung des Naturhistorischen Museums der Stadt Mainz. - Teil II : Vorderasien. Mainzer Naturw.Archiv, 22 : 97-106.
- Kinzelbach, R. 1985 : The scorpions of the Near and Middle East. Wiesbaden. (Tübinger Atlas des Vorderen Orients. TAVO).
- Levy, G. and Amitai, P. 1980 : Scorpiones. - Fauna Palaestina, Arachnida I. 130 pp., Jerusalem.
- Vachon, M. 1966 : Liste des scorpions connus en Égypte, Arabie, Israël, Liban, Syrie, Jordanie, Turquie, Irak, Iran. Toxicon, 1966, vol.4 : 209-218.
- Wahbeh, Y. 1976 : A study of Jordanian scorpions. Jordan Med.Journal, 11(2): 84-92.



Distribution map of Jordanian scorpions (east of Jordan river).

RECORDS

A new record of *Compsobuthus weneri*
(Birula) 1908 (Scorpionida : Buthidae)
from Egypt

In October 1987, my friend Lieutenant Ahmed Mansour brought to me a specimen of *Compsobuthus weneri* (Birula) 1908, collected by him on 9.10.1987 from Geziret El-Haggar (about 30 36 N, 30 49 E), a village near El-Shohada (El-Menoufeia Governorate) which lies on the western side of the Nile Delta.

C. weneri had been previously recorded from Egypt by :
Simon (1910) from: Assiout, Wadi Halfa, and Red Sea region;
Gough & Hirst (1927) from: Helouan (Cairo), Boulak Dakrour (Giza, near Cairo), Kafr Amar (Giza, El-Ayyat), Sollum-Siwa District, and Thebes;
Whittick (1947) from: Siwa and Khamissa (near Siwa);
Levy & Amitai (1980) from: central and southern Sinai.

But, there is no record of this species from the Nile Delta.

The specimen, on which this new record is based, had been collected from a cultivated area. Lieut. Mansour told me that he had found another similar specimen in the same area about two months before collecting this record, but he had lost it.

The measurements of the specimen (in millimetres) are:

Total Length :	31.36
Prosoma L :	3.98
Mesosoma L :	7.74
Metasoma L :	19.64

It has a brownish yellow body with light yellow legs.

References

- Gough, L.H. & S. Hirst 1927: Key to identification of Egyptian Scorpions. Bull.Minist.Agric.Egypt Tech.Scient.Serv., 76: 12 pp.
- Levy, G. & P. Amitai 1980: Scorpiones. - Fauna Palaestina, Arachnida I. 130 pp., Jerusalem.
- Simon, E. 1910: Révision des Scorpions d'Égypte. Bull.Soc.Ent.Égypte, 1910: 57-87.
- Whittick, R.J. 1947: Results of the Armstrong College Expedition to Siwa Oasis (Libyan Desert) 1935. Scorpiones (Arachnida). Bull.Soc.Fouad 1er Entom., 31: 121-126.

Hisham K. El-Hennawy

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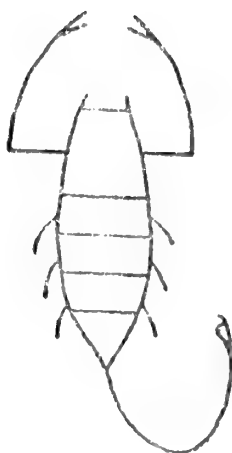
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PREFACE

This issue is almost completely dedicated to the study of Pseudoscorpions, to be the third arachnid order dealt with in this bulletin.

SERKET is, now, in exchange with : Revue Arachnologique, Zoology in the Middle East and Newsletter of the Spider Club of Southern Africa. The editor has to thank Drs. J.C.Ledoux (France), R.Kinzelbach (G.Germany), and K.K. Filmer (South Africa) for the exchange and for their appreciation of SERKET.

Really, the encouragement of friends and colleagues, of many different countries, especially Mr. John R.Parker, who visited Cairo during last October, is pushing the work in SERKET forwards.


SERKET is going now and in the two next issues to have a standard form. This form depends on the readers' criticism and the available material for publication.

SERKET's articles are indexed now in the list of C.I.D.A., in Ecology and Entomology Abstracts, and in the Zoological Records too. I hope this will encourage the contributors !

The cost of postage had been officially increased last July to make it obligatory to increase the subscription to be US \$ 5.00 (personal rate) and US \$ 7.00 (institutional rate) per issue.

Correspondence concerning subscription, exchange, publication, etc. should be addressed to the editor.

The Editor


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Key to Pseudoscorpionid Families
(Arachnida : Pseudoscorpionida)

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This key is based mainly upon the synopses of Muchmore (1982), with reference to Beier (1932). Family Lithiidae is separated, here, from the Cheliferidae according to Weygoldt (1969) and Muchmore (1982). Also the Myrmochernetidae are separated as a family after Beier (1932) and Muchmore (1982), and not included in Chernetidae as Judson (1985) suggested. The Pseudogarypidae are transferred to superfamily Feaelloidea after Beier (1932), instead of being included in Garypoidae as in Muchmore's synopses.

The most differentiating characters are underlined.

Key to Superfamilies

1. Tarsi of legs : 1 and 2 consist of one segment each,
3 and 4 consist of two segments each (i.e. Heterotarsate)
Chelicerae : large, sometimes $2/3$ the carapace length
Eyes : usually 4 (or absent)
(S.O. Heterosphyronida = Chthoniinea) Superfamily 1 Chthonioidea
- . ----- : 1-4 consist of two segments each
----- : moderately large, about $1/2$ the carapace length or shorter
---- : usually 4, may be 2 or absent
(S.O. Diplosphyronida = Neobisiinea) 2
* . ----- : 1-4 consist of one segment each
----- : small, not more than $1/3$ the carapace length
---- : 4, 2 or absent
(S.O. Monosphyronida = Cheliferinea) 3
2. Carapace : usually rectangular or square
Chelicerae : about $1/2$ the carapace length
Eyes : often 4, but may be 2 or absent
Abdominal tergites and sternites : undivided

Superfamily 2 Neobisioidea

-. ----- : may be rectangular, or more or less triangular

----- : shorter than $\frac{1}{2}$ the carapace length

---- : usually 4, but 2 in some Menthids

----- : may be divided or undivided

Superfamily 3 Gerypoidea

3. Femora of legs : 1 and 2 are very different in morphology and articulation from the femora of legs 3 and 4

Venom apparatus : developed in one or both fingers of the palpal chela (absent in F. Myrmochernetidae)

Eyes : 2 or absent

Superfamily 6 Cheliferoidea

-. ----- : are all similarly structured

4

4. Femora of legs : Telofemur : attached firmly to the basifemur

Venom apparatus : developed in one or both fingers of the palpal chela

Eyes : 2 or absent

Superfamily 4 Cheiridioidea

-. ----- : ----- : freely movable on the basifemur

----- : absent

---- : 4

Superfamily 5 Fecelloidea

Key to Families of :

Superfamily 1 Chthonioidea

1. Carapace : usually with 50 setae or more on it

Pedipalps : Moveable finger : Subbasal trichobothrium : much closer to subterminal than to basal

Abdomen : often little longer than the carapace

Spiracles : surrounded by distinct sclerotic plates, oriented obliquely to the long axis of the abdomen

F. 1 Iridenchthoniidae (=Oithidae)

-. ----- : with fewer than 30 setae on it

----- : ----- : ----- : may be close to the subterminal or close to the basal, near the finger's base

----- : usually distinctly longer than the carapace

----- : surrounded by indistinct plates, placed transversely to the long axis of the abdomen

F. 2 Chthoniidae

Superfamily 2 Neobisioidae

1. Venom apparatus : developed only in the fixed finger of the palpal chela 2
 -. ----- : ----- movable ----- 5
 =. ----- : well developed in both fingers ----- 3

2. Carapace : rectangular or square, and often bears an epistome on the anterior margin

Chelicerae : Galea : usually present, often reduced in size

Abdomen : Pleural membranes : distinctly granulated

Leg 4 : Line of articulation between the basifemur and telofemur :
 is perpendicular to the long axis of the femur

F. 1 Neobisiidae

- . ----- : rectangular
 ----- : ----- : a long, slender, simple galea, or absent
 ----- : ----- : may be granulated, but usually are
 smoothly and longitudinally striated
 ----- : ----- :
 at least slightly oblique to the long axis of the femur
 Movable finger of the palpal chela : Terminal trichobothrium :
 is shortened and lanceolate towards the distal end

F. 2 Syrinidae

3. Palpal chela : Trichobothrium : many more than 12; variable in size,
 and difficult to count exactly, but there is always
 a group of 3 or 4 conspicuous ones on the dorsum of
 the hand

Leg 4 : Line of articulation between the basifemur and telofemur :
 near the middle, and perpendicular to the long axis of the
 femur

F. 3 Ideoroncidae

- . ----- : ----- : the usual 12
 ----- : ----- :
 oblique to the long axis of the femur

4

4. Carapace : usually something broader than long, or square

Chelicerae : Flagellum : consists of 6 or 7 slenderly clavated and
 distally deeply incised blades

Abdomen : Pleural membranes : granulated or granulostriated

Palpal hand : Internal basal trichobothrium on the dorsum : at the
 base of the fixed finger

Palpal chela : Fixed finger : Marginal teeth : are widely spaced
 : Movable ---- : ----- : are nearly obsolete

Subterminal tarsal setae : acuminate (simple, pointed)

F. 4 Hydre

-. ----- : a little longer than broad

----- : ----- : consists of 2 or 4 small, spinulated setae

----- : ----- : smoothly and longitudinally striated

----- : ----- : isolated
near the middle

----- : Both finners : Marginal teeth : are distinct and contiguous

----- : denticulated (toothed)

F. 5 Bochicidae

5. Corolla : longer than broad

Eyes : absent

Chelicerae : Galea : 2 long, slender, simple gales

: Flagellum : consists of 3 or 4 short, denticulated setae

Palpal band : Internal basal trichobothrium on the dorsum : isolated
near the middle

Palpal chela : Fixed finger : with a blunt tip which bears several teeth
: Movable ---- : Venom duct : long

Leg 4 : Line of articulation between the basifemur and telofemur :
oblique to the long axis of the femur

Legs : Claws : simple

Habitat : only in caves

Distribution : Central America

F. 6 Vachoniidae

-. ----- : almost square

--- : usually 4

```

- - - - - : - - - - - : branched

```

: ----- : consists of 6 to 8 long setae, some terminally denticulated

----- : ----- : at the base of
the fixed finger with 3 other trichobothria

----- : ----- : has terminal teeth arranged into a sheathing
device for the venom tooth of the movable finger

: - - - - - : - - - - - : short

----- : ----- :
perpendicular to the long axis of the femur

---- : ---- : each has a small denticle on the outer margin, towards base

----- : in soil and litter

----- : South America and South Africa

F. 7 Gymnobisiidae

Superfamily 3 Garypoidae

1. Venom apparatus : developed only in the fixed finger of the palpal chela
 Eyes : 2 or 4
 Body surfaces : Carapace : heavily sclerotized (also coxae of palpi & leg 1,2)
 : Abdomen : weakly ----- (----- legs 3, 4)
 Palpal chela : with more than the usual 12 trichobothria
 Abdominal tergites and sternites : undivided
Legs : with a unique joint between coxae 2 and 3, at the level of the
 posterior margin of the carapace; it apparently allows the body
 to bend easily at this point

F. 1 Menthidae

1. ----- : well developed in both fingers of the palpal chela
 ---- : 4
 ----- : usually granulated or smooth, but not sclerotized
 ----- : with 12 trichobothria, or occasionally fewer than 12
 ----- : either divided or undivided
 ---- : without such a joint between coxae 2 and 3

2

2. Carapace : mostly rectangular
 Body surfaces : usually smooth
 Setae of the body and appendages : usually long and acuminate
 Abdomen : usually long and oval
 : Pleural membranes : usually smoothly, longitudinally striated
 : Tergites and sternites : either divided or undivided
 Legs : Femora 3 and 4 : short and stout

F. 2 Olpidae

1. ----- : distinctly triangular
 ----- : usually granulated
 ----- : often toothed, but small and inconspicuous
 ----- : broad
 : ----- : granulated or rugose, and often bear small setae
 : ----- : divided
 ---- : ----- : moderately slender

F. 3 GarypidaeSuperfamily 4 Cheiridoidae

1. Body shape : markedly flattened, with short legs extend out to the sides
 Body surfaces : generally smooth; palpi finely granulated

Pseudosternal plate : is found between the widely separated coxae of legs
2 and 3

Carapace : slightly narrowed anteriorly

Eyes : absent

Abdomen : long and oval

----- : Ternites and sternites : undivided

F. 1 Sternophoridae

-. ----- : not so

----- : generally heavily sclerotized and granulated

----- : absent

----- : distinctly triangular

---- : 2, very small

----- : broadly oval

: ----- : divided

F. 2 Cheiridiidae

Superfamily 5 Faeellidae

1. Carapace : and abdomen articulate in a unique movable joint involving
the small, undivided first abdominal tergite

: anterior margin is roughened and produced into lobes

Chelicerae : much reduced in size and atypical in form

Palpal chela : greatly reduced in size, and has weak fingers

Distribution : Africa and India (1 genus) F. 1 Faeellidae

-. ----- : without such particular articulation with the abdomen

: anterolateral margins have distinct protuberances or horns,
posterolateral margins are produced posteriorly and ventrally
as lateral elae

----- : less than half as long as the carapace

----- : normal, not reduced

----- : U.S.A. and Tasmania (2 genera)

F. 2 Pseudogarypidae

Superfamily 6 Cheliferoidae

1. Venom apparatus : absent

Eyes : absent

Pedipalps : robust; fingers are short, stout and curved

Body length : shorter than 1.5 mm

F. 1 Myrmochernetidae

- . ----- : developed in either one or both fingers of palpal chela
 ---- : 2 or absent 2

2. Venom apparatus : developed only in the movable finger, vestigial or
 absent in the fixed finger

Palpal chela : Fingers : usually have accessory teeth, located externally
 and internally to the marginal row

F. 2 Chernetidae

- . ----- : developed only in the fixed finger or in both fingers
 ----- : ----- : without accessory teeth 3

3. Venom apparatus : developed only in the fixed finger

Abdominal tergites and sternites : usually not completely divided 4

- . ----- : well developed in both fingers of the palpal chela
 ----- : usually divided 5

4. Cerapace : smooth; with, at most, a shallow transverse furrow near the
 middle

Leg 4 : Tarsus : has a prominent tactile seta : near the proximal end

F. 3 Atemnidae

- . ----- : crenulated; and has two distinct transverse furrows
 ----- : ----- : ----- : near the middle

F. 4 Miratemnidae

5. Chelicerae : Flagellum : consists of 2 or 3 setae

Body size : very small

Abdominal tergites : (divided) the individual sclerites slanted backwards
 toward the middle to produce a chevron effect

Cerapace : generally triangular, but the posterior margin is produced
 backwards at the middle

F. 5 Pseudocheiridiidae

- . ----- : ----- : consists of 3 or 4 setae
 ----- : moderate; 2-4 mm in length
 ----- : without chevron effect (in shape) 6

6. Chelicerae : Flagellum : consists of 3 setae

Legs : Tarsal claws and subterminal tarsal setae : simple or toothed

Body length : 3-4 mm

F. 6 Cheliferidae

- . ----- : ----- : consists of 4 setae
 ----- : ----- : simple

----- : about 2-3 mm

F. 7 Withiidae

References

- Beier, M. 1932: Pseudoscorpionidea. I. Subord. Chthoniinae et Neobisiinae.
Das Tierreich, 57: xx, 1-258; Berlin.
- Beier, M. 1932: Pseudoscorpionidea. II. Subord. Cheliferinae.
Das Tierreich, 57: xxi, 1-254; Berlin.
- Judson, F.L.I. 1985: Redescription of Myrmecochernes Tullgren (Chelonethida : Chernetidae).
Bull.Br.Arachnol.Soc. (1985)6(8): 321-327.
- Machnere, L.B. 1982: Pseudoscorpionida.
In: S.P.Parker, Synopsis and classification of living organisms. 2: 96-102. McGraw-Hill Book Co., New York.
- Weygoldt, P. 1969: The biology of Pseudoscorpions.
xiv, 145 pp. Harvard University Press, Cambridge, U.S.A.

Pseudoscorpions of Egypt,
Key and List of Species
(Arachnida : Pseudoscorpionida)

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This list of species is based mainly upon the great work of Beier (1932a,b), with reference to and additions from the works of: Audouin (1825)-3 spp.; Simon (1880)-1 sp. and (1899)-2 spp.; Tullgren (1909)-4 spp.; Beier (1933)-1 sp., (1947)-1 sp. and (1962)-4 spp. It includes 28 species (17 genera) from 9 families, which are recorded from Egypt or North Africa and maybe found in Egypt. Species from Wadi Halfa, at the borderline between Egypt and Soudan, are included in the list. The localities of the 16 species which are certainly recorded from Egypt (+Wadi Halfa) are mentioned in the list.

The key to superfamilies and families is a part of a key to pseudoscorpionid families (El-Hennawy, 1988) which is based upon the synopses of Muchmore (1982). The key to 28 species is based mainly upon the work of Beier (1932a,b) with reference to Beier (1933, 1947 and 1962).

Abbreviations used: L/W = length / width
mm = millimetre

List of Species

Superfamily 1 Chthonioidea

Family Chthoniidae Hansen 1894
Genus Chthonius C.L.Koch 1843
C. orthodectylus (Leach, 1817)
C. tenuis L.Koch 1873

Superfamily 2 Neobisioidea

Family Neobisiidae Chamberlin 1930
Genus Neobisium Chamberlin 1930
N. muscorum (Leach, 1817)

Superfamily 3 Gerypoidae

Family Olpiidae Chamberlin 1930

Subfamily 1 Garypininae Daday 1888

Genus *Amblyolpium* Simon 1898*A. dollfusii* Simon 1898

Subfamily 2 Olpiinae Banks 1895

Genus *Calocheirus* Chamberlin 1930*C. atopus* Chamberlin 1930Genus *Minnize* Simon 1881*M. hirsti* Chamberlin 1930

Luxor

M. vermis Simon 1881

Wadi Natron, Giza

Genus *Olpium* L.Koch 1873*O. aegyptiacum* Ellingsen 1910

Egypt

O. gracile Beier 1930

Senafir Island (Red Sea)

O. kochi Simon 1881

Wadi Natron, Cairo, Assuan

O. savignyi Simon 1879

Egypt

O. tenue Chamberlin 1930

Assuan (Wadi Halfa)

Family Gerypidae Hansen 1894

Subfamily 1 Gerypinae Simon 1879

Genus *Gerypus* L.Koch 1873*G. beauvoisi* (Audouin, 1825)

Alexandria

Subfamily 2 Geogerypinae Chamberlin 1930

Genus *Geogerypus* Chamberlin 1930*G. minor* (L.Koch, 1873)

Egypt

Superfamily 4 Cheiridioidae

Family Cheiridiidae Chamberlin 1931

Genus *Cheiridium* Menge 1855*C. muscorum* (Leach, 1817)*C. nubicum* Beier 1962

Wadi Halfa

Superfamily 5 Cheliferoidae

Family Chernetidae Menge 1855

Subfamily 1 Chernetinae Beier 1932

Genus *Pselaphochernes* Beier 1932*P. scorpoides* (Hermann, 1804)

Subfamily 2 Lamprochernetinae Beier 1932

Genus Lamprochernes Tömösväry 1882

L. nodosus (Schrank, 1803)L. savignyi (Simon, 1881)

Lower Egypt

Family Atemnidae Chamberlin 1931

Genus Atemnus Crenestrini 1884

A. letourneuxi (Simon, 1881)

Lower Egypt

Family Cheliferidae Hagen 1879

Genus Chelifer Geoffroy 1762

C. cencroides (Linnaeus, 1758)

Egypt

Genus Dactylochelifer Beier 1932

D. nubicus Beier 1962

Wadi Halfa

Genus Hysterochelifer Chamberlin 1932

H. meridianus (L.Koch, 1873)H. tuberculatus (Lucas, 1846)

Genus Rhacochelifer Beier 1932

R. maculatus (L.Koch, 1873)R. nubicus Beier 1962

Wadi Halfa

R. similis Beier 1932

Siwa Oasis

Family Withiidae Muchmore 1982

Genus Withius Kew 1911

W. subruber (Simon, 1879)Key to Families

1. Tarsi of legs : 1 and 2 consist of one segment each,

3 and 4 consist of two segments each

Chelicerae : large, sometimes 2/3 the carapace length

Eyes : usually 4 (or absent)

Superfamily 1 ChthonioideaF. 1 Chthoniidae

- . - - - - - : 1-4 consist of two segments each

- - - - - : moderately large, about 1/2 the carapace length or shorter

- - - - : usually 4; maybe 2 or absent

= . - - - - - : 1-4 consist of one segment each

- - - - - : small, not more than 1/3 the carapace length

- - - - : 2 or absent

2. Carapace : usually rectangular or square

Chelicerae : about 1/2 the carapace length

Eyes : often 4, but maybe 2 or absent

Abdominal tergites and sternites : undivided

Superfamily 2 Neobisioidea

F. 2 Neobisiidae

-. ----- : maybe rectangular, or more or less triangular

----- : shorter than $\frac{1}{2}$ the carapace length

---- : usually 4

----- : maybe divided or undivided

Superfamily 3 Garypoidea

2a

2a. Carapace : mostly rectangular

Body surfaces : usually smooth

Setae of the body and appendages : usually long and acuminate

Abdomen : usually long and oval

: Pleural membranes : usually smooth, longitudinally striated

: Tergites and sternites : either divided or undivided

Legs : Femora 3 and 4 : short and stout

F. 3 Olpiidae

-. ----- : distinctly triangular

----- : usually granulated

----- : often toothed, small and inconspicuous

----- : broad

: ----- : granulated or rugose; often bear small setae

: ----- : divided

---- : ----- : moderately slender

F. 4 Garypidae

3. Legs : femora : are all similarly structured;

telofemur attached firmly to the basifemur

Superfamily 4 Cheiridioidea

F. 5 Cheiridiidae

-. ---- : ----- : 1 and 2 are very different in morphology and articulation
from the femora of legs 3 and 4

Superfamily 5 Cheliferoidea 3a

3a. Venom apparatus : developed only in the movable finger, vestigial
or absent in the fixed finger

Palpal chela : fingers : usually have accessory teeth, located
externally and internally to the marginal row

F. 6 Chernetidae

-. ----- : developed only in the fixed finger or in both fingers

----- : ----- : without accessory teeth

3b

3b. Venom apparatus : developed only in the fixed finger

Abdominal tergites and sternites : some are divided

Carapace : smooth, with, at most, a shallow transverse furrow near the middle

Body length : moderate, 3-5 mm

F. 7 Atemnidae

-. ----- : well developed in both fingers of the palpal chela

----- : usually divided

3c

3c. Chelicerae : Flagellum : consists of 3 setae

Legs : Tarsal claws and subterminal tarsal setae : simple or toothed

body length : 3-4 mm

F. 8 Cheliferidae

-. ----- : ----- : consists of 4 setae

----- : ----- : simple

----- : about 2-3 mm

F. 9 Withiidae

Key to Species of :

Family 1 Chthoniidae

Genus Chthonius

1. Pedipalp : Hand : broad (L/W 1.68), not darker than the other palpal segments

Anterior eyes : distant from the anterior margin of carapace : by about one eye diameter (1) C. orthodectylus

-. ----- : ----- : slender (L/W 2.00), darker than other palpal segments

----- : ----- : by about a half of an eye diameter (½)

C. tenuis

Family 2 Neobisiidae

Genus Neobisium

N. muscorum

Family 3 Olpiidae

1. Abdomen : Tergites and sternites : at least some of them divided

Chelicerae : Flagellum : with 4 setae

Legs : Arolium : undivided

SF. 1 Gerypininae

Genus Amblyolpium

A. dollfusi

-. ----- : ----- : undivided

----- : ----- : with 3 setae (rarely 4)

----- : ----- : simple (undivided)

SF. 2 Olpiinae

2. Pedipalp : Femur : with a dorsal trichobothrium near its base

Abdomen : Tergites : with 2 marginal setae

Genus Calocheirus

C. atopus

-. ----- : ----- : without such a trichobothrium

----- : ----- : with 4-6 marginal setae

3

3. Carapace : long and narrow, at least 1.5 times as long as broad; with almost parallel sides; with two more or less distinct transverse furrows

Genus Minniza

3a

3a. Pedipalp : Finger : as long as hand without stalk

Femur : L/W 2.7-3.1

Tibia : L/W 2.1-2.3

Body length : 2-2.5 mm

M. vermis

-. ----- : ----- : distinctly longer than the hand

----- : L/W 3.2-3.6

----- : L/W 2.4-2.8

----- : 3-4 mm

M. hirsti

-. ----- : not more than 1.4 times as long as broad; posteriorly diverged; without transverse furrows or only the posterior one is weakly distinct

Genus Olpium

4a

4a. Pedipalp : Femur : slender, L/W 4 at least

4b

-. ----- : ----- : broader, L/W 3.7 at most

4c

4b. Small species; Body length : 2.1 mm

Pedipalp : Femur : L/W 4.1-4.2

Tibia : L/W 3.3

O. tenue

-. Bigger species; Body length : 3.4 mm

----- : ----- : L/W 4.7

----- : L/W 3.4

O. aegyptiacum

4c. Small species; Body length : 1.7-2.5 mm

Pedipalp : Femur : L/W 2.9-3.2

Tibia : L/W 1.7-2.3

Colour : reddish yellow; finger something darker

O. gracile

-. Bigger species (2.5-3 mm), with more slender palpal femur and tibia, and different colours

4d

4d. Body length : 2.5 mm

Pedipalp : Femur : L/W 3.7

Tibia : L/W 3.2

Colour : yellow-brown, with darker hand O. savignyi

-. ----- : 3 mm

----- : ----- : L/W 3.3

----- : L/W 2.8

----- : dark or reddish brown, with darker hand; femur and tibia with lighter ends; finger light reddish

O. kochi

Family 4 Garypidae

1. Pedipalp : Coxa : with undeveloped maxilla

Chelicerae : Finger : without contiguous teeth

Flagellum : consists of 3 or 4 setae

Legs : Coxae : long and narrow; posteriorly diverged

Arolium : longer or shorter than claws (distinctly shorter in Garypus)

SF. 1 Garypinae

Genus Garypus

G. beauvoisi

-. ----- : ----- : with well developed maxilla

----- : ----- : mostly with contiguous teeth

----- : consists of only one seta

----- : ----- : wide and short; not diverged posteriorly

----- : longer than claws

SF. 2 Geogarypinae

Genus Geogarypus

G. minor

Family 5 Cheiridiidae

Genus Cheiridium

1. Pedipalp : with moderate coarse granulation

Finger : as long as hand with stalk

Femur : L/W 5.3

Tibia : L/W 2.8

Hand : L/W 1.8

Body length : 1.3-1.4 mm

C. museum

- . ----- : densely grained and coarsely granulated in a significant coarse sculpture of the integument, except the finger which is almost smooth
- : shorter than hand with stalk
- : L/W 4.7-4.8
- : L/W 3.1
- : L/W 2.3-2.4
- : 1.1-1.2 mm C. nubicum

Family 6 Chernetidae

1. Setae of body and pedipalps : short; toothed or clavated
- Pedipalp : Femur, tibia and hand : without pseudotactile bristles
- Legs : Tarsus 4 : Trichobothrium : situated near the middle or further distal
- SF. 1 Chernetinae
- Genus Paelephochernes P. scorpioides

- . ----- : long; pointed
- : ----- : with pseudotactile bristles
- : ----- : situated near the base (of tarsus)
- SF. 2 Lamprochernetinae
- Genus Lamprochernes 2a

- 2a. Small species; Body length : 1.8-2 mm
- Pedipalp : Movable finger : almost as long as hand without stalk
- Femur : L/W 2.4
- Tibia : L/W 2.2
- Hand : L/W 2 L. nodosus

- . Bigger species; Body length : 2.5 mm
- : ----- : a little shorter than hand without stalk
- : L/W 2.2
- : L/W 2
- : L/W 1.5 L. savignyi

Family 7 Atemnidae Genus Atemnus A. letourneuxi

Family 9 Withiidae Genus Withius W. subruber

Family 8 Cheliferidae

1. Legs : Claws : with splitted tops (bi-pointed)

Pedipalp : Femur : L/w 5-5.3 (very slender)

Tibia : L/W 4-4.1 (slender)

Genus CheliferC. cancrinoides

-. ---- : ---- : simple (not splitted) (N. Those of Rhacochelifer males' fore legs are always modified)

----- : ---- : L/w 4.1 at most

----- : L/w 3.8 at most

2

2. Legs : Tarsi : Subterminal setae : simple (not toothed)

Pedipalp : Femur : L/W 3.9

Tibia : L/w 2.9

Hand : L/W 2.25

Genus DactylocheliferD. nubicus

-. ---- : ---- : ----- : toothed

----- : Femur, tibia and hand : with different ratios

3

3. Pedipalp : Femur : L/w 4.1 (slender)

Tibia : L/W 3.5-3.8

Genus Hysterochelifer

3a

3a. Male : Leg 1 : Tarsus : provided distally with an exterior small tubercle

Pedipalp : Finger : distinctly shorter than hand without stalk

Hand : L/W 2.3-2.5

Body length : 2.5-3.5 mm

H. tuberculetus

-. ---- : ---- : ----- : without a tubercle

----- : ---- : as long as hand without stalk, or something longer

---- : L/W 1.8

----- : 3-4 mm

H. meridianus

-. ----- : ---- : L/w 3-3.3

----- : L/W 2.2-2.4

Genus Rhacochelifer

4a

4a. Pedipalp : Medial side of femur and tibia : with greater granules

R. maculatus

-. ----- : ----- : without greater granules 4b

4b. Carapace : distinctly longer than broad

Hand L/ Finger L : 1.3-1.4

R. similis

-. ----- : a little longer than broad

----- : 1.5

R. nubicus

References

- Audouin, V. 1825: Explication sommaire des planches d'Arachnides de l'Égypte et de la Syrie, publiées par Jules-César Savigny.
In: Description de l'Égypte, ou Recueil des observations et des recherches qui ont été faites en Égypte pendant l'expédition de l'armée française.
Histoire Naturelle. Tome Premier 1809. Paris.
4^e partie, pp. 99-186. (2nd ed.: 1827, part 22, pp.291-430)
- Beier, M. 1932a: Pseudoscorpionidea. I.Subord. Chthoniinea et Nanbisinea.
Das Tierreich, 57: XX, 1-258; Berlin.
- 1932b: Pseudoscorpionidea. II.Subord. Cheliferinea.
Das Tierreich, 58: XXI, 1-294; Berlin.
- 1933: Pseudoscorpionidea (Chelonethi). Mission Robert in Dollfus en Égypte.
Mémoires Inst.Égypte, 21: 85-87.
- 1947: Pseudoscorpionidea (Arachnida). Results of the Armstrong College Expedition to Siwa Oasis (Libyan Desert), 1935.
Bull.Soc.Foued 1^{er} Entom., 31: 127-128.
- 1962: Ergebnisse der Zoologischen Nubien-Expedition 1962.
Teil III. Pseudoscorpionidea.
Ann.Naturhistor.Mus.Wien, 65: 297-303.
- El-Hennawy, H.K. 1988: Key to Pseudoscorpionid Families (Arachnida: Pseudoscorpionida).
SERKET (1988) vol.1(3): 1-8.
- Muchmore, W.B. 1982: Pseudoscorpionida.
In: S.P.Parker (ed.), Synopsis and classification of living organisms. 2: 96-102; New York.
- Simon, E. 1880: Liste d'Arachnides recueillis aux environs immédiats d'Alexandrie (Égypte) par M.A.Letourneux.
Ann.Soc.ent.France, 1880, pp. XLVII-XLVIII.
- 1899: Arachnides recueillis par M.C.-J.Dewitz en 1898, à Bir-Hooker (Wadi Natron), en Égypte.
Bull.Soc.ent.France, 1899, 244-247.
- Tullgren, A.1909: Solifugae, Scorpiones und Chelonethi aus Ägypten und dem Sudan.
In: L.A.Jägerskiöld (ed.): Results of the Swedish Zoological Expedition to Egypt and the White Nile 1901, Uppsala, part 3, no. 21, A: 1-12.

Scorpions of Jordan
Additional Note

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Birulatus haasi Vachon, 1973 (Family Buthidae) had been described as a new species (and new genus) from Jordan by Prof.Dr. Max Vachon (1973, pp. 949-950).

This species had not been included, by mistake, neither in the key nor in the list of species of scorpions of Jordan published by the author (1988).

It can be easily recognized from the other species recorded from Jordan by:

1. The body is covered by dense granulation.
2. Prosoma : without crests, but densely granulated "serrated granulation in form of pearls".
3. Mesosomal tergites (1-6): with 3 crests, posteriorly projecting (as in *Companobuthus*).
4. Metasoma (tail): slender, shorter than Prosoma + Mesosoma
5. Pedipalp : Finger : two times as long as the hand
6. Small size (19 mm)..

Locality : south of Tefila near Shobak.

(There is no other known record.)

References

- El-Hennawy, H.K. 1988: Scorpions of Jordan.
SERKET (1988) vol.1(2): 13-20.
- Vachon, M. 1973: Étude des caractères utilisés pour classer les familles et les genres de Scorpions (Arachnides).
I. Le trichobothriotaxie en Arachnologie.
Sigles trichobothrioux et types de trichobothriotaxie chez les Scorpions.
Bull.Mus.natn.Hist.nat., Paris, 3^e sér., 140, Zool.
194: 857-958.

Hysterochelifer tuberculatus (Lucas, 1846)
(Pseudoscorpionida : Cheliferidae) in Jordan

During my last trip to Jordan, I had collected pseudoscorpions three times.

- I. 1.11.1988; from Abu-Nussair (north-west of Amman); under stones, among dry straw; 2 juv., Family Olpiidae.
- II. 4.11.1988; from Zara, at the Dead Sea shore; under lime stones, on dry sand; 1 ♀, 1 juv., Family Olpiidae.
- III. 9.11.1988; from Abu-Nussair (north-west of Amman); under stones, among straw and dry plant material (moderate to high humid habitat);
 - a. 2 juv., Family Olpiidae
 - b. 5 ♂♂, 7 ♀♀, Family Cheliferidae, Hysterochelifer tuberculatus (Lucas, 1846).

H. tuberculatus males are easily identified, knowing that the male has a tubercle near the distal end of the first leg tarsus; hence the name tuberculatus.

Its colour is brown; males are darker than females.

All tergites and sternites are divided except the first three tergites of males.

Measurements (mm):

		<u>average</u>
1. Body length (without chelicerae):		
♂	1.70 - 2.20	1.92
♀	1.96 - 2.65	2.36
2. Pedipalp's ratios (length/width):		
Femur :		
♂	4.00 - 4.67	4.29
♀	3.75 - 4.29	4.07
Tibia :		
♂	2.67 - 3.14	2.86
♀	2.44 - 2.89	2.74
Hand :		
♂	3.33 - 3.81	3.53
♀	3.14 - 3.54	3.36

Hasarius adansonii (Audouin, 1825)

(Araneida : Salticidae) in Egypt

Hasarius adansonii (Audouin, 1825) is an active jumping spider which is always encountered inside houses. This species which was described by Victor Audouin, 1825, as Attus adansonii (from plate 7 published by J.-C. Savigny in: Description de l'Égypte) is the type of genus Hasarius Simon, 1871. This genus includes 20 species from which adansonii is the only cosmopolitan species. (Roewer, C.F. 1954 Katalog der Araneae. 2b Bruxelles)

The male of H. adansonii is easily recognized, when alive, by its "face portrait". Its pedipalps are equipped by long white hairs which make contrast with the colour of the spider's body. Their characteristic movement, up and down, tells you the name of the spider from the first glance!

The records of H. adansonii in Egypt are few. I could not find more than the two records of O.P. Cambridge (General list of the spiders of Palestine and Syria. Proc.Zool.Soc.Lond., 1872, pp. 212-354 and Catalogue of a collection of spiders made in Egypt. Proc.Zool.Soc.Lond., 1876, pp. 541-630) : 1. 1872, Cambridge stated "In 1864 I found several examples in my bedroom at the hotel at Alexandria, Egypt."

2. 1876, 3 ♂♂, 1 ♀ from Cairo

In my own collection, I have specimens of H. adansonii from two localities :

I. Cairo, Heliopolis (2 areas), inside houses.

- | | |
|--------------|----------|
| 1. 28.5.1986 | 1 ♂, 1 ♀ |
| 2. 30.5.1986 | 1 ♂ |
| 3. 7.1988 | 1 ♀ |
| 4. 1.9.1988 | 2 ♂♂ |

II. Ras El-Barr (at the mediterranean, about 31 31 N, 31 50 E),
inside a house.

- | | | |
|----|--------------|------|
| 1. | 9.7.1988 | 1 ♂ |
| 2. | 13-15.8.1988 | 4 ♂♂ |

Hence, there are three known localities of H. adansonii from Egypt, till now.

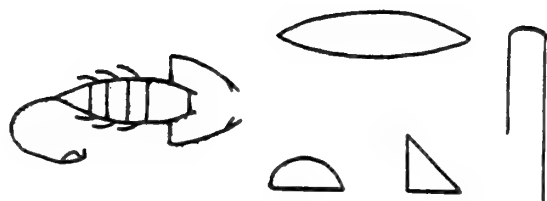
Hisham K. El-Hennawy

C O N T E N T S

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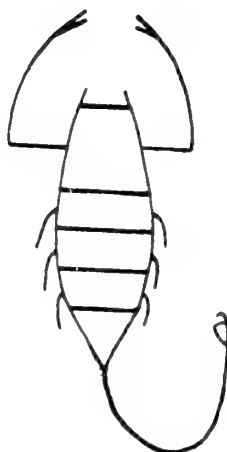
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PREFACE

Introducing this issue, the last one of volume 1, I hope I could put the basis of SERKET as an Egyptian, Middle Eastern, and North African arachnological bulletin. The start is humble but not bad!

The second volume of SERKET (1990-1991), in 4 parts, will reflect more "evolution" in its way to be a formal scientific bulletin (plesio- or apomorphic ?!). Standard sections will appear and more Arachnid groups will be dealt with. Other authors will publish their works here, specially after the end of volume 1's venture!

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Annotated Checklist of Egyptian Spider Species (Arachnida : Araneae)

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Introduction

The scientific study of Egyptian spiders began with the publication of Forskål's description of three spider species from Egypt in his work published by C. Niebuhr (1775). After fifty years, Audouin completed and published the work of Savigny in describing 81 spider species from Egypt and Palestine (north to Akko) which were figured on seven of the nine plates devoted to Arachnida in that great historical work. [Savigny described spider species of pl.1 f.1 - pl.4 f.10 noting their localities and Audouin described the other species without reference to their localities]

The second catalogue of Egyptian spiders was that of Cambridge (1876) which had been published after his records of 15 species from Sinai (1870) and other species during 1872 and 1874. In his catalogue, Cambridge recorded 164 species by himself, from Alexandria to Assuan (63 of them as new species) and 62 species from literature (not found by himself) to raise the number of recorded species to 226. In that catalogue, the work of L. Koch (1875) was represented by his 15 spp. from Cairo (7 of them as new species).

After that, the works of Simon were the most important from 1880 till 1910. [1880a: 11 spp. collected by M.A. Letourneux near Alexandria; 1880c: 3 n.spp. from Alexandria, Edko, and Ismailia; 1899: 32 spp. collected from Bir-Hooker, Wadi Natron by M.C.-J. Dewitz; 1907: 33 spp. from Cairo, Upper Egypt (near Assuan), etc.; 1910: 36 spp. in his first part of the Catalogue of Arachnids of Northern Africa]

During the forties of this century, Denis described new species from Egypt and his work upon spiders of Siwa (1947) was a very considerable addition to our knowledge of Egyptian Oases' spiders. In that work, Denis recorded 89 species, 25 of them as new species. In the same time, Dr. A.I. Hassan, the first Egyptian araneologist, began his studies to publish two papers upon Theraphosidae and Decapidae (1950, 1953) and to prepare his own catalogue. Hassan's unpublished catalogue "Classification of Recent Spiders" was prepared about 1950 to include scientific names (of 318 species arranged in 29 families), synonyms, localities in Arabic, and many separate notes among pages.

Unfortunately, I did not know about Hassan's catalogue until 1982 after the first meeting with Dr. Hassan when I myself had finished the preparation of my first list of species (which included 321 species in 33 families). Since that time, only a list of Egyptian spider genera had been published by me (1987) to include only the number of species with every genus name.

This now list has been prepared depending upon the literature and refernces which I could find. It was revised many times and classified on the basis of the most recent spider classification. It includes 367 species arranged in 173 genera of 40 families. All taxa are arranged alphabetically to facilitate the usage of the list.

Under every species name, only the examined references are mentioned. References to different catalogues (Roewer, Brignoli, and Platnick) are included. Localities of available known records are arranged alphabetically just before noting different references individually in a chronological order.

Lastly, I would like to thank my father, Mr. Kamal El-Din El-Hennawy, who supplied me with a computer, a printer and enough fund for my work. This list would not appear in this form without his great support and encouragement.

List of Abbreviations

Catalogues:

R1	Roewer's Katalog der Araneae, volume 1 (1942)
R2a	-----, ----- 2 part 1 (1954)
R2b	-----, ----- 2 part 2 (1954)
B	Brignoli's A Catalogue of the Araneae (1983)
P	Platnick's Advances in Spider Taxonomy (1989)

0000 page number in the catalogue

♂ ♀ o male, female, and/or immature (described or noted)

(00) references number per species in a catalogue

(T) type-species of a genus

Rec records (localities from which the species is recorded)

Ref references, within which the species is recorded from Egypt, from its area, or as a new species

List of Families

Infraorder Mygalomorphae

Nemesiidae Theraphosidae

Infraorder Araneomorphae

Agelenidae	Linyphiidae	Prodidomidae
Araneidae	Liocranidae	Salticidae
Cithaeronidae	Loxoscelidae	Scytodidae
Clubionidae	Lycosidae	Segestriidae
Corinnidae	Mimetidae	Selenopidae
Dictynidae	Mysmenidae	Tetragnathidae
Dolomedidae	Oecobiidae	Theridiidae
Dysderidae	Oonopidae	Thomisidae
Eresidae	Oxyopidae	Titanoecidae
Filistatidae	Palpimanidae	Uloboridae
Gnaphosidae	Philodromidae	Urocteidae
Hersiliidae	Pholcidae	Zodariidae
Heteropodidae	Pisauridae	

List of Species

Order Araneida
Suborder Opisthothelae
Infraorder Mygalomorphae

Family Nemesiidae

Genus *Nemesia* Savigny, 1825*N. cellicola* Savigny, 1825 (T) R1 180 ♂ (4)

Rec: Alexandria

- Ref: 1. N.c. Audouin, 1825 pp. 107-8 pl. 1 f. 1 Dq near Alexandria
2. N.c. Ausserer, 1871 p. 168 Dq
3. N.c. Ausserer, 1875 pp. 153-5 Nq
4. N.c. Raven, 1985 p. 95 ff. 79-84 Nq

Family Theraphosidae

Genus *Chaetopelma* Ausserer, 1871*C. aegyptiacum* Ausserer, 1871 (T) R1 225 ♂ (1)

Rec: El-Fayum

- Ref: 1. C.a. Ausserer, 1871 pp. 191-2 Dq Egypt
2. C.a. Hassan, 1950 pp. 168-170 Nq desert near Fayoum
3. C.a. Smith, 1988 p. 76 f. 11b ph. (p. 173) D

C. olivaceum (C.L. Koch, 1842) R1 225-6 ♂ (5)

Rec: ---

- Ref: 1. C.o. Hassan, 1950 p. 162 N
2. C.o. Smith, 1988 pp. 76-77 f. 13L D
C. shabati Hassan, 1950 B 135 ♂ (1)

Rec: Cairo

- Ref: 1. C.s. Hassan, 1950 pp. 163-8 ff. 1-10 Dq
dark dampy places in towns [Cairo?]

Infraorder Araneomorphae

Family Agelenidae

Genus *Agelena* Walckenaer, 1805*A. lepida* Cambridge, 1876 R2a 37 ♂ (2)

Rec: Upper Egypt, Wadi Natron

- Ref: 1. A.l. Cambridge, 1876 pp. 558-9 Dq in tufts of coarse grass and dry herbage on the desert near Gebel y Silsilis, Upper Egypt
2. A.l. Pavesi, 1893 p. 42 N desert of Gebel-y-Silsilis, Upper Egypt
3. A.l. Simon, 1899 p. 244 N Bir-Hooker (Wadi Natron)
4. A.l. Caporiacco, 1928 p. 97 N Egypt
5. A.l. Brignoli, 1977 p. 14 N Upper Egypt, Wadi Natron
6. A.l. Blauwe, 1980b pp. 19-23 ff. 30-35 Dq Egypt

A. l. deserta Caporiacco, 1933 R2a 37 ♂ (3)

Rec: Siwa Oasis

- Ref: 1. A.l.d. Denis, 1947b p. 31 pl. 1 f. 2, pl. 4 f. 1 Nq
Siwa, Zegawa, Aghourmih salt marsh,
Anas Yutra, Tarterad Hamid Bakour

A. timida (Savigny, 1825) R2a 37-8 ♂ (3)

Rec: Rosetta

- Ref: 1. Arachne t. Audouin, 1825 p. 114 pl. 1 f. 7 Dq gardens of Rosetta
2. A.t. Brignoli, 1977 p. 14 N Egypt
3. A.t. Blauwe, 1980b p. 26 N sp. incerta Egypt

Genus *Lycosoides* Lucas, 1846L. coarctata (Dufour, 1831) R2a 81 ♂♀ (16)

Rec: Alexandria

- Ref: 1. *Textrix puta* Cambridge, 1872a p. 274 D♀
 2. *Textrix c.* Cambridge, 1876 p. 559 D♀ among stones
 and debris at Alexandria
 3. *Textrix c.* Pavesi, 1878 p. 376 N Egypt
 4. L.c. Brignoli, 1977 p. 16 N Egypt
 5. *Textrix c.* Blauwe, 1980a pp. 15-17 f. 18-22 D♂♀ Egypt
 6. L.c. Platnick, 1989 p. 402 N Mediterranean

Genus *Tegenaria* Latreille, 1804T. domestica (Clerck, 1757) R2a 77-8 ♂♀ (50)

Rec: Rosetta

- Ref: 1. *Aranea derhamii* Scopoli, 1763 p. 400 D
 2. *Arachne familiaris* Audouin, 1825 pp. 113-4 pl. 1 f. 6 D♀
 from houses of Rosetta
 3. T.d. Brignoli, 1977 p. 15 N Egypt
 T. pagana C.L. Koch, 1841 R2a 75 ♂♀ (14)

Rec: Cairo

- Ref: 1. T.p. L. Koch, 1875 p. 36 N near Cairo
 2. T. *proxima* Cambridge, 1876 p. 559 N Cairo
 3. T.p. Pavesi, 1878 p. 375 N Egypt
 4. T.p. Brignoli, 1977 p. 15 N Cairo
 T. parietina (Fourcroy, 1785) R2a 75-6 ♂♀ (20)

Rec: Alexandria

- Ref: 1. T. *domestica* Audouin, 1825 pp. 112-3 pl. 1 f. 5 D♀
 from houses of Alexandria
 2. T.p. Brignoli, 1977 p. 15 N Egypt

Genus *Textrix* Sundevall, 1830T. caudata L. Koch, 1872 R2a 80 ♂♀ (6)

Rec: ---

- Ref: 1. T.c. Blauwe, 1980a pp. 12-14 f. 13-17 D♂♀ Egypt

Family *Araneidae*Genus *Araneus* Clerck, 1757A. bituberculata Walckenaer, 1802 R1 782-3 ♂♀ (23)

Rec: Alexandria, Cairo

- Ref: 1. *Epeira dromedaria* Cambridge, 1876 p. 577 N
 near Alexandria and Cairo
 A. circe (Savigny, 1825) R1 784 ♂♀ (21)

Rec: Alexandria

- Ref: 1. *Epeira c.* Audouin, 1825 pp. 127-8 pl. 2 f. 9 D♀
 inside houses at Alexandria
 2. *Epeira c.* Cambridge, 1876 p. 577 N at Alexandria
 3. *Epeira c.* Pavesi, 1878 p. 367 N Egypt
 A. flavissima Linnaeus, 1758 R2b 1397 nicht zu
 deuten !

Rec: ---

- Ref: 1. A.f. Linnaeus, 1758 p. 622 D Egypt
 A. perplicata (Cambridge, 1872) R1 789 o♀ (3)

Rec: Alexandria

- Ref: 1. *Epeira p.* Cambridge, 1872a pp. 300-301 D♀ (immature ♂)
 on low-growing plants in geometric snares
 2. *Epeira p.* Cambridge, 1876 p. 577 N near Alexandria



A. redii Scopoli, 1763 R1 790-1 ♂ (26)

Rec: Sinai

- Ref: 1. A. r. Scopoli, 1763 p. 394 D
 2. A. aldrovandi Scopoli, 1763 p. 394 D
 3. Epeira solers, var.? Cambridge, 1870 p. 819 N
 Jebel Musa, peninsula Sinai
 4. Epeira redii Pavesi, 1883 pp. 13-14 N Egypt
A. subfusca (C.L. Koch, 1837) R1 793 ♂ (15)

Rec: Siwa Oasis

- Ref: 1. A. dalmaticus Denis, 1947b p. 48 N Siwa
 2. A. dalmaticus minor Denis, 1947b pp. 48-9 N Siwa, Siwa
 Tarterad, Baharein, Ilrhabit Uncorde, Girba, Khamissa
A. suspicax (Cambridge, 1876) R1 793 ♂ (4)

Rec: Alexandria, Damietta, El-Fayum, Rosetta, Siwa Oasis,
 Wadi Natron

- Ref: 1. Epeira apoclista Audouin, 1825 pp. 130-2 pl. 3 f. 1-2 D♂
 island of Rosetta; gardens of Damietta
 2. Epeira s. Cambridge, 1876 p. 577 D on rushes
 in a marsh near Alexandria
 3. A. s. Simon, 1899 p. 244 N Bir-Hooker (Wadi Natron)
 4. A. s. Denis, 1944 p. 53 N Birket-el-Zerum in Fayoum
 5. A. s. Denis, 1947b p. 49 pl. 2 f. 10-11 N♂, Siwa, Khamissa,
 Gara, Ilrhabit Uncorde, Shiata, Maragi, Koreishid
A. umbraticus Clerck, 1757
 (A. sexpunctata Linnaeus, 1758) R1 791-2 ♂ (36)

Rec: Damietta

- Ref: 1. A. swammerdamii Scopoli, 1763 p. 393 D
 2. Epeira umbratica Audouin, 1825 p. 132 pl. 3 f. 3 D♂
 near Damietta

Genus **Argiope** Savigny, 1825

A. bruennichii (Scopoli, 1772) R1 734-5 ♂ (26)

Rec: ---

- Ref: 1. A. b. Pavesi, 1878 p. 367 N Egypt
A. lobata (Pallas, 1772) R1 735 ♂ (22)

Rec: Alexandria, Cairo, Sinai

- Ref: 1. A. sericea Audouin, 1825 pp. 124-5 pl. 2 f. 6 D♀
 near Alexandria and Cairo
 2. A. splendida Audouin, 1825 pp. 125-6 pl. 2 f. 7 D♀ (Akko)
 3. A. sericea Cambridge, 1870 p. 819 N convent gardens
 and back of Mount Sinai
 4. A. lobata Pavesi, 1878 p. 367 N Egypt
 5. A. l. Denis, 1947b p. 44 pl. 2 f. 5 N♀
A. obscuripes Strand, 1906 R1 736 ♀ (2)

Rec: Wadi Natron

- Ref: 1. A. o. Strand, 1906 p. 618 D♀ Bir-Hooker (Wadi Natron)
A. sector (Forskål, 1775) R1 737 ♂ (10)

Rec: Nubia, Port Said, Siwa Oasis, Upper Egypt

- Ref: 1. Aranea s. Forskål, 1775 p. 85 D (Yemen)
 2. A. lordii Cambridge, 1870 pp. 420-1 pl. 50 f. 1 D♀ (Massowah)
 3. A. lordii Simon, 1882 p. 230 N Port-Said, Upper Egypt, Nubia
 4. A. lordii Pavesi, 1883 p. 10 N Port-Said, Upper Egypt,
 Nubia, Lower Egypt
 5. A. clarki Denis, 1947b pp. 43-4 pl. 2 f. 4 N Siwa, Maragi,
 Ilrhabit Uncorde, El Arig, Shiata, Khamissa
 [Port Said : Pavesi, 1883]



A. trifasciata (Forskål, 1775) R1 733-4 ♂♀ (34)

Rec: Alexandria, Cairo, Siwa Oasis, Wadi Natron

Ref: 1. Aranea t. Forskål, 1775 pp. 86-7 D Cairo

2. A. aurelia Audouin, 1825 pp. 122-4 pl. 2 f. 5 D♂♀
near Cairo and Alexandria

3. A. aurelia Cambridge, 1876 p. 576 N in the gardens and
orange-groves at Shoubra and other places near Cairo

4. A. sticticalis Cambridge, 1876 p. 576 D♂
among low herbage near Alexandria

5. A. t. Simon, 1899 p. 244 N Bir-Hooker (Wadi Natron)

6. A. t. Simon, 1907 pp. 5-6 N Cairo

7. Metargiope t. Denis, 1947b pp. 44-5 N
Siwa, Khamissa, Shiata, El Arig, Koreishid,
Abu Sheruf, Girba, Baharein, Maragi

Genus Cyclosa Menge, 1866

C. insulana (Costa, 1834) R1 755 ♂♀ (15)

Rec: Siwa, Wadi Natron

Ref: 1. C. i. Simon, 1899 p. 244 N Bir-Hooker (Wadi Natron)

2. C. i. Denis, 1947b p. 46 N Siwa

Genus Cyrtophora Simon, 1864

C. citricola (Forskål, 1775) R1 747 ♂♀ (22)

Rec: Cairo, Siwa Oasis, Wadi Natron

Ref: 1. Aranea c. Forskål, 1775 p. 86 D Cairo, on Citrus trees

2. C. opuntiae Cambridge, 1876 p. 576 N abundant on the
prickly pear, some acacia, young date-palms, and
other low trees and shrubs, near and above Cairo

3. C. c. Simon, 1899 p. 244 N Bir-Hooker (Wadi Natron)

4. C. c. Simon, 1907 p. 6 N Cairo and its surroundings

5. C. c. Denis, 1947b pp. 45-6 N Siwa, Girba, Khamissa,
Tarterad Hamid Bakour, Gagub

Genus Drexelia McCook, 1892

D. acuticauda (Simon, 1906)

(Larinia a.) R1 769 ♀ (1)

Rec: Luxor, Siwa Oasis

Ref: 1. Larinia a. Denis, 1944 p. 53 N Louksor, Siwa

2. Larinia a. Denis, 1947b p. 47 N Siwa, Girba, Exabaia,
Baharein, Khamissa

3. D. a. Grasshoff, 1971 pp. 94-5 f. 46, 39 (map: p. 89) D♂♀
Siwa Oasis

4. D. a. Levy, 1986 pp. 8-10 f. 40-49 D♂♀

Genus Gasteracantha Sundevall, 1833

G. sanguinolenta C.L. Koch, 1845 R1 937-8 ♀ (23)

G. s. ruppelli (Strand, 1915)

R1 938 ♀ (1) Egypt

Rec: ---

Genus Gea C.L. Koch, 1843

G. nilotica Simon, 1906 R1 745 ♀ (1) Egypt

Rec: ---

Genus Hypsosinga Ausserer, 1871

H. albivittata (Westring, 1851) F 338 ♂♀ (2)

(Singa a.) R1 873 ♂♀ (17)

Rec: Alexandria

Ref: 1. Singa affinis Cambridge, 1876 p. 575 D♂
on low plants near Alexandria

Genus *Larinia* Simon, 1874

L. chloris (Savigny, 1825) R1 768 ♂ (1)

Rec: Siwa Oasis, Suez, Upper Egypt

Ref: 1. Epeira c. Audouin, 1825 p.133 pl.3 f.5 ♂ (near Akko)

2. *Epeira* c. Cambridge, 1876 p. 576 N on low plants

in Upper Egypt

3. L.c. Denis, 1947b pp.46-7 pl.2 f.6 N Shiata, Khamissa

4. L.c. Grasshoff, 1970a p. 222-4 f. 5, 7, 8 (map: p. 220) Đồ

3422

5. L.c. Levy, 1986 p.5 f.18-27(p.6) Dda

Genus *Larinioides* Caporiacco, 1934

L. cornutus (Clerck, 1757) F 340 ♂ (7)

(*Araneus cornutus* = *A. foliata*) R1 800-801 ♂ (45)

Rec: Rosetta

Ref: 1. Aranea leuwenhoekii Scopoli, 1763 p.394 D

2. *Epeira apoclista* Audouin, 1825 pp. 128-9 pl. 2 f. 10 D³⁹

island of Rosetta and edges of the Nile near it

Genus *Singa* C.L.Koch, 1836

S. lucina (Savigny, 1825) R1 874-5 ♂ (4)

Rec: Alexandria, Rosetta

Ref: 1. Epeira 1. Audouin, 1825 pp. 132-3 pl. 3 f. 4 Dq

island of Rosetta

2. *Epeira* 1. Cambridge, 1872a p. 299 N among low-growing plants on banks of streams, near Alexandria

3. S.1. Cambridge, 1876 pp. 575-6 N. among rushes and plants in a marsh near Alexandria

S. semiatra L.Koch, 1867 R1 876 ♂♀ (2) Mediterranean

Rec: ---

Ref: 1. S.s. L.Koch, 1967 pp.860-1 Dđ (Corfu)

2. S.s. Pavesi, 1878 pp. 369-370 N Egypt

3. *Araneus* (S.) s. Caporiacco, 1928 p. 93 N Egypt

Genus *Siwa* Grasshoff, 1970

S. atomaria (Cambridge, 1876)

(*Larinia a.*) R1 768 ♂ (1)

Rec: Assuan, Cairo, Siwa Oasis, Upper Egypt

Ref: 1. Epeira a. Cambridge, 1876 pp. 577-9 pl. 59 f. 9 D39

on low plants near Cairo and in Upper Egypt.

2. *Larinia ovata* Denis, 1947b pp. 47-8 pl. 2 f. 7-9 D. 30

Siwa, Sitra

3. S. a. Grasshoff, 1970b pp. 409-410 f. 18, 28 (map: p. 421) D: 30

Cairo, Assuan

4. S.a. Levy, 1986 p.3 f.1-9(p.2) Dd

Family Cithaeronidae

Genus *Cithaeron* Cambridge, 1872

C. limbatus (Simon, 1885) R2a 475 ♂♀ (2)

Rec: ---

Ref: 1. C.L. Simon, 1893 Hist. Nat. Ar., I(2):385-6 f. 345 No^o Egypt

2. C.1. Caporiacco, 1928 p. 90 N Egypt

Family **Clubionidae**Genus **Cheiracanthium** C.L.Koch, 1839C. annulipes Cambridge, 1872 R2a 477 ♀ (1)

Rec: Cairo, Philoe island (Assuan), Wadi Natron

Ref: 1. C.a. Cambridge, 1872a pp.254-5 pl.16 f.36 D♀

2. C.a. Cambridge, 1876 p.553 N Cairo

3. C.a. Simon, 1899 p.244 N Bir-Hooker (Wadi Natron)

4. C.a. Simon, 1907 p.8 N Philoe island

C. dubium Cambridge, 1874 R2a 477 ♂ (1)

Rec: Alexandria

Ref: 1. C.d. Cambridge, 1876 p.553 N Alexandria

C. equestre Cambridge, 1874 R2a 479 ♂♀ (1)

Rec: Cairo, Siwa Oasis

Ref: 1. C.e. Cambridge, 1876 p.553 N near Cairo

2. C.e. Denis, 1947b p.66 N Siwa

C. isiacum Cambridge, 1874 R2a 479 ♂♀ (1)

Rec: Cairo, Siwa, Wadi Natron

Ref: 1. C.i. Cambridge, 1876 p.553 N on low plants, near Cairo

2. C.i. Pavesi, 1883 p.48 N Cairo

3. C.i. Simon, 1899 p.244 N Bir-Hooker (Wadi Natron)

4. C.i. Simon, 1907 p.7 N Cairo

5. C.i. Caporiacco, 1928 p.97 N Egypt

6. C.i. Denis, 1947b p.65 N Siwa

C. jovium Denis, 1947 R2a 479 ♀ (1)

Rec: Siwa Oasis

Ref: 1. C.j. Denis, 1947b p.65 pl.4 f.6 D♀ Siwa, Khamissa

C. pelasgicum (C.L.Koch, 1837) R2a 480 ♂♀ (10)

Rec:---

Ref: 1. C.p. Pavesi, 1878 pp.376-7 N Egypt

C. tenue Denis, 1947 R2a 482 ♂♀ (1)

Rec: Siwa Oasis

Ref: 1. C.t. Denis, 1947b p.66 pl.4 f.7,8 D♂♀ Siwa, Gara, Zegawa

Genus **Clubiona** Latreille, 1804C. listeri Audouin, 1825 R2b 1446 nicht zu deuten!

Rec:---

Ref: 1. C.l. Audouin, 1825 pp.157-8 pl.5 f.9 D♀

Family **Corinnidae**Genus **Castianeira** Keyserling, 1879C. antinorii (Pavesi, 1880) R2a 609 ♂♀ (3)

Rec: Siwa Oasis

Ref: 1. C.a. Denis, 1947b p.66 pl.4 f.10-12 N♂♀

Siwa, Tarterad Hamid Bakour

Family **Dictynidae**Genus **Altella** Simon, 1884A. libyca Denis, 1947 R2b 1301 ♀ (1)

Rec: Siwa Oasis

Ref: 1. A.l. Denis, 1947b p.29 pl.1 f.1 D♀ Siwa

Genus **Archaeodictyna** Caporiacco, 1928A. anguiniceps (Simon, 1899) R2b 1302 ♂♀ (3)

Rec: Siwa Oasis, Wadi Natron

Ref: 1. Dictyna a. Simon, 1899 pp.244-6 f.1-3 D♂♀

Bir-Hooker (Wadi Natron)

2. Dictyna a. Simon, 1910 p.283 N Bir-Hooker

3. A.a. Caporiacco, 1928 p.81 N Egypt

4. A.a. Denis, 1947b p.28 N Baharein, East Lake shore (Siwa)

Genus Devade Simon, 1884D. hirsutissima (Simon, 1880) R2b 1304 ♂♀ (6)

Rec: Mariout, Siwa Oasis, Suez

Ref: 1. Diotima h. Simon, 1880b p.55 D♂♀

2. D.h. Simon, 1910 p.279 D♂♀ on the plants' bases on the sandy and salty grounds, Mariout and Suez

3. D.h. Caporiacco, 1928 p.81 N Egypt

4. D.h. Denis, 1947b pp.28-9 N♀ in a shell of mussel shores of Birket El Gessabaia (Lake Exabaia)

Genus Dictyna Sundevall, 1833D. conducta Cambridge, 1876 R2b 1305 ♂♀ (2)

Rec: Alexandria, Cairo, Lower Egypt, Suez

Ref: 1. D.c. Cambridge, 1876 pp.556-7 pl.58 f.4 D♂♀ on the branches of the Sont acacia in Lower Egypt

2. D.c. Simon, 1907 p.1 N Cairo

3. D.c. Simon, 1910 p.283 D♂ Alexandria, Cairo, Suez

D. conducens Cambridge, 1876 R2b 1305 ♂♀ (2)

Rec: Cairo, Lower Egypt, Elephantine and Philoe island (Assuan) Wadi-Halfa

Ref: 1. D.c. Cambridge, 1876 p.556 pl.58 f.3 D♂♀

on the branches of the Sont Acacia, near Cairo and in other parts of Lower Egypt

2. D.c. Simon, 1907 p.1 N Cairo, Elephantine (on Acacia nilotica), Philoe island, Wadi Halfa

3. D.c. Simon, 1910 p.283 N whole Egypt

D. innocens Cambridge, 1872 R2b 1306 ♂♀ (3)

Rec: Cairo

Ref: 1. D.i. Cambridge, 1872a p.262 D♀ on low growing plants

2. D.i. Cambridge, 1876 p.555 D♂♀ on a low plant near Cairo

Genus Lathys Simon, 1884L. humilis (Blackwall, 1855) (T) R2b 1327 ♂♀ (17)

Rec:---

L. h. meridionalis (Simon, 1874) R2b 1328 ♂♀ (3)

Rec: Alexandria

Ref: 1. L.h.m. Simon, 1910 p.278 N Alexandria
very common on bushes**Family Dolomedidae****Genus Dolomedes** Latreille, 1804D. hyppomene Savigny, 1825 R2a 128 ♀ (2)

Rec: Damietta

Ref: 1. D.h. Audouin, 1825 pp.148-9 pl.4 f.9 D♀ near Damietta

Family Dysderidae**Genus Dysdera** Latreille, 1804D. crocata C.L.Koch, 1839 R1 296-7 ♂♀ (19)

Rec: Alexandria

Ref: 1. D.c. Pavesi, 1878 p.379 N Egypt

2. D.c. Simon, 1907 p.3 N Alexandria

3. D.c. Simon, 1910 pp.320-1 f.9K(p.315) D♂♀ Alexandria

D. erythrina (Walckenaer, 1802) R1 292 ♂♀ (18)

Rec:---

Ref: 1. D.e. Audouin, 1825 p.154 pl.5 f.3 D♀

- D. _____ lata Reuss, 1834 R1 294 ♀ (3)
 Rec: Alexandria, Cairo
 Ref: 1. D.l. Koch, 1875 p.58 N Cairo
 2. D.l. Cambridge, 1876 p.547 No under stones, Alexandria
 3. D.l. Pavesi, 1878 p.379 N Egypt
- D. _____ lubrica Simon, 1907 R1 294 ♂♀ (2)
 Rec: Alexandria?, Cairo
 Ref: 1. D.l. Simon, 1907 pp.1-2 D♂♀ Cairo, (Alexandria?)
 2. D.l. Simon, 1910 p.320 f.7E(p.313) D♂♀ Alexandria!, Cairo
- D. _____ pharaonis Simon, 1907 R1 295 ♂♀ (1)
 Rec: Alexandria, Mariout
 Ref: 1. D.p. Simon, 1907 p.3 D♂♀ Alexandria, Mariout
 2. D.p. Simon, 1910 pp.318-9 D♂♀ Alexandria, Mariout
- D. _____ subnubila Simon, 1907 R1 296 ♂♀ (1)
 Rec: Alexandria, Cairo
 Ref: 1. D.s. Simon, 1907 p.3 D♂♀ Alexandria, Cairo
 2. D.s. Simon, 1910 pp.321-2 f.9I(p.315) D♂♀
 Alexandria, Cairo
- D. _____ westringii Cambridge, 1872 R1 296 ♂♀ (5)
 Rec: Alexandria
 Ref: 1. D.w. Cambridge, 1872a p.223 pl.13 f.2 D♂♀
 2. D.w. Simon, 1907 pp.2-3 N Alexandria
 3. D.w. Simon, 1910 p.311 N Alexandria

Family Eresidae

- Genus Dorceus C.L.Koch, 1846
D. _____ quadrispilatus Simon, 1908 R2b 1291 ♂ (2)
 Rec: Alexandria, Mariout
 Ref: 1. D.q. Simon, 1908 pp.82-3 D♂ Alexandria, Mariout
 2. D.q. Simon, 1910 pp.293-4 D♂ Alexandria, Mariout
- Genus Eresus Walckenaer, 1805
E. _____ petagnae Audouin, 1825 R2b 1295 ♀ (1)
 Rec: Alexandria
 Ref: 1. E.p. Audouin, 1825 p.151 pl.4 f.11 D♀
 2. E.p. Cambridge, 1876 p.554 N under stone near Alexandria
 3. E.p. Simon, 1884 p.326 N Egypt
- <Note. This species may be E. niger Petagna, 1787 ; or
E. n. frontalis (Latreille, 1819) - [Cambridge, 1876]; or
E. semicanus, E. pharaonis, or perhaps also Dorceus
quadrispilatus - [Simon, 1910, p.294]>
- E. _____ pharaonis Walckenaer, 1837 R2b 1295 ♀ (4)
 Rec: ---
 Ref: 1. E.p. Simon, 1908 pp.83-4 D♀ Egypt
 2. E.p. Simon, 1910 p.298 D♀ Egypt
- E. _____ pulchellus Lucas, 1864 R2b 1296 ♀ (1) Nubien
 <Note. Simon, 1908 p.81 & 1910 p.289: It may be the male of
Stegodyphus niloticus>
- E. _____ semicanus Simon, 1908 R2b 1295 ♂♀ (2)
 Rec: Alexandria, Mariout, Suez
 Ref: 1. E.s. Simon, 1908 p.83 D♂♀ Alexandria, Mariout, Suez
 2. E.s. Simon, 1910 pp.294-5 f.5 D♂♀ Alexandria,
 Mariout, Suez
- E. _____ walckenaeri Brullé, 1832 R2b 1296 ♂♀ (15)
 Rec: ---
 Ref: 1. E. theisii Pavesi, 1878 p.389 N Egypt



Genus *Stegodyphus* Simon, 1873

S. dufouri (Audouin, 1825) R2b 1297 ♂ (9)

Rec: Alexandria, Assiut, Assuan, Beni Suef, Cairo, El-Baharia Oases, El-Fayum, El-Menoufeia, Gizeh, Kena, Luxor, Nile Barrage, Port Said, Sinai(southern), Siwa Oasis, Sohag, Suez, Wadi Halfa, Wadi Natron

- Ref: 1. *Eresus* d. Audouin, 1825 pp. 151-2 pl. 4 f. 12 Dq
 2. *Eresus* d. Cambridge, 1876 p. 554 N immature examples, on low plants on the edge of the desert above Assouan (Note: It may be *S. lineatus* (E. adspersus) - Simon, 1908)
 3. *Eresus* d. Simon, 1880a p. 47 N near Alexandria
 4. S.d. Simon, 1899 p. 244 N Bir-Hooker (Wadi Natron)
 5. Simolitor Strand, 1908 p. 69 Nq Bir Hooker, Wad-i-Natron
 6. S.d. Simon, 1908 p. 79 N♂ on reeds in the surroundings of Alexandria; Suez; Fayoum
 7. *S. manicatus* Simon, 1908 pp. 79-80 D♂ (non q) Dj. Mokattam, near Cairo
 8. *S. niloticus* Simon, 1908 pp. 80-2 Dq Ouadi Halfa
 9. S.d. Simon, 1910 p. 287 f. 4B D♂ Alexandria, Fayoum, Suez
 10. *S. manicatus* Simon, 1910 p. 288 f. 4C D♂ (non q) Dj. Mokattam near Cairo
 11. *S. niloticus* Simon, 1910 pp. 288-290 Dq Ouadi Alfa
 12. *S. manicatus* Denis, 1947b pp. 30-1 N♂ Siwa, Koreishid, Abu Sheruf, Sitra, Exabaia, Tarterad Hamid
 13. S.d. El-Hennawy, 1987a p. 5 f. 13 (map) N Cairo, El-Fayum, Beni Suef, Assiut, Sohag, Kena, Luxor, and other localities on a map
 14. S.d. El-Hennawy, 1987c p. 19 N Kafr El-Sheikh Khalil - El-Menoufeia; El-Manshia, near Kom Ombo - Assuan; Kom Osheem - El-Fayum; Wadi Gharandel - Southern Sinai; Port Said; El-Bawitti - El-Baharia Oases
 15. S.d. Kraus & Kraus, 1988 pp. 208-214 f. 104, 105, 111, 112, 126-131, 142-173 Map 9 D♂ Siwa, Exabaia, Sitra, Cairo (Center Salam), Djebel Mokattam near Cairo, Gizeh, Nile Barrage, Upper Egypt, Assuan, Wadi Halfa

S. lineatus (Latreille, 1817) R2b 1297 ♂ (12)

Rec: Alexandria, Cairo, Damietta, Sinai, Siwa Oasis, Suez

- Ref: 1. *Eresus acanthophilus* Cambridge, 1870 p. 820 N Wady Nasb, Gennah, Jebel Musa, and Convent gardens, back of Mount Sinai
 2. S.l. Simon, 1908 p. 78 N very rare, on thorny bushes, Dj. Mokattam, Dj. Ataka
 3. S.l. *deserticola* Simon, 1908 p. 79 N Egyptian desert
 4. S.l. Simon, 1910 pp. 286-7 f. 4A D♂ very rare in Egypt; Dj. Ataka
 5. S.l. *deserticola* Simon, 1910 p. 287 Nq Egypt
 6. S.l. *deserticola* Denis, 1947b pp. 29-30 Nq Siwa depression, on Acacia trees
 7. S.l. Kraus & Kraus, 1988 pp. 231-5 f. 28, 202-205, 227, 228, 234-242 pl. 3 (f. A-E, G) Map 7 D♂ Siwa depression, Alexandria, Damietta [=Dumyat], Sinai

S. manicatus Simon, 1876 R2b 1299 ♂ (4)

Rec: Cairo

- Ref: 1. S.m. Simon, 1908 pp. 79-80 Dq (non ♂) Dj. Mokattam near Cairo
 2. S.m. Simon, 1910 p. 288 Dq (non ♂) near Cairo
 3. S.m. Kraus & Kraus, 1988 pp. 218-220 f. 108, 114, 115, 188-194 Map 6 D♂

Family **Filistatidae**Genus **Filistata** Latreille, 1810

F. insidiatrix (Forskål, 1775) (T) R2b 1280 ♂♀ (15)

Rec: Alexandria, Cairo, Lower Egypt, Siwa Oasis

Ref: 1. Aranea i. Forskål, 1775 p. 86 D Egypt

2. F. testacea L. Koch, 1875 p. 58 N Cairo

3. F. testacea Cambridge, 1876 pp. 543-4 N♂ near Alexandria
and in several other parts of Egypt

4. F. puta Cambridge, 1876 p. 544 D♀ Alexandria

5. F. testacea Pavesi, 1878 p. 380 N Lower Egypt

6. F. i. Simon, 1910 p. 300 N Egypt

7. F. puta Simon, 1910 p. 300 N Egypt [desertic form of F. i.]

8. F. i. Denis, 1947b p. 24 N♀ Siwa

9. F. puta Denis, 1947b p. 25 N♀ [or F. i. puta] Siwa

10. F. i. Benoit, 1968 pp. 993-4 N Egypt

11. F. i. Brignoli, 1982 pp. 68-9 f. 1-5 N♂♀ Alexandria

Genus **Sahastata** Benoit, 1968

S. nigra (Simon, 1897) B 145 (N)

(Filistata n.) R2b 1280 ♀ (4)

Rec: Cairo, Luxor, Suez

Ref: 1. Filistata n. Simon, 1910 p. 300 N Cairo!, Suez!,
plain of Thebes

2. S. n. Benoit, 1968 pp. 97-9 f. 1-5 N♂♀

Family **Gnaphosidae**Genus **Aphantaulax** Simon, 1878

A. albin (Audouin, 1825) R2a 408 ♀ (5)

Rec: ---

Ref: 1. Clubiona a. Audouin, 1825 p. 157 pl. 5 f. 8 D♀

2. A. a. Simon, 1884 p. 339 N Egypt

Genus **Berlandina** Dalmat, 1922

B. jovia Denis, 1947 R2a 358 ♀ (1)

Rec: Siwa Oasis

Ref: 1. B. j. Denis, 1947b pp. 63-4 pl. 3 f. 11 D♀ Siwa

B. plumalis (Cambridge, 1872) (T) R2a 358 ♂♀ (15)

Rec: Alexandria, Cairo

Ref: 1. Gnaphosa p. Cambridge, 1872a pp. 225-6 pl. 15 f. 3 D♂
under a stone, at Alexandria

2. Gnaphosa p. Cambridge, 1876 p. 550 N Alexandria

3. Berlandia p. Dalmat, 1920 pp. 268-270 f. 45, 52, 53 D♂♀
Alexandria

4. B. p. Denis, 1944 p. 48 N Zeitun, near Cairo

B. venatrix (Cambridge, 1874) R2a 358 ♂♀ (4)

Rec: Alexandria, Assuan, Cairo, Luxor, Sinai, Wadi Halfa

Ref: 1. Gnaphosa v. Cambridge, 1876 p. 551 N at Alexandria

2. Berlandia v. Dalmat, 1920 pp. 272-3 f. 48, 56, 57 D♂♀
Cairo, Alexandria, Thèbes, Assouan,
Quadi-Halfa, Ain-Mouça (Sinai)

Genus **Camillina** Berland, 1919

C. berlandi Denis, 1944 R2a 410 ♀ (1)

Rec: Cairo

Ref: 1. C. b. Denis, 1944 p. 47 pl. 1 f. 13, 14 D♀ Zeitun, near Cairo
in the desert under plants and stones

Genus **Drassodes** Westring, 1851

D. aegyptius (Cambridge, 1874) R2a 385 ♂ (3)

Rec: Alexandria

Ref: 1. Drassus a. Cambridge, 1876 p. 552 N under stones at Alexandria

D. alexandrinus (Cambridge, 1874) R2a 385 ♂ (1)

Rec: Alexandria

Ref: 1. Drassus a. Cambridge, 1876 p. 551 N among the debris of an old wall near Alexandria

2. D. a. Caporiacco, 1928 p. 83 N Egypt

D. citipes Simon, 1893 R2a 385 ♀ (1)

Rec: ---

Ref: 1. D. c. Simon, 1893 Hist. Nat. An., I(2) p. 362 Dq Egypt

D. denotatus (Cambridge, 1874) R2a 386 ♀ (1)

Rec: Cairo

Ref: 1. Drassus d. Cambridge, 1876 p. 552 N Cairo

D. ensiger (Cambridge, 1874) R2a 386 ♂♀ (1) Egypt

<Note. Not recorded in Cambridge's Catalogue, 1876>

D. infumatus (Cambridge, 1872) R2a 387 ♂♀ (1)

Rec: Cairo

Ref: 1. Drassus i. Cambridge, 1872a pp. 238-9 pl. 15 f. 16 D♂♀ in an old ruined mud wall near Cairo

2. Drassus i. Cambridge, 1876 p. 551 N under the ruins of an old mud wall near Cairo

D. pseudomonosus Strand, 1915 R2a 391 ♂♀ (3) Egypt

Rec: ---

Genus **Echemus** Simon, 1878

E. mollis (Cambridge, 1874) R2a 418 ♀ (1)

Rec: Alexandria

Ref: 1. Prothesima m. Cambridge, 1876 p. 553 N under a stone near Alexandria

Genus **Leptodrassus** Simon, 1878

L. pupa Dalmas, 1919 R2a 405 ♂♀ (1)

Rec: Suez

Ref: 1. L. p. Dalmas, 1919 p. 248 D♂♀ Suez

Genus **Megamyrmæcion** Reuss, 1834

M. caudatum Reuss, 1834 (T) R2a 425 ♀ (4) Egypt

Rec: ---

M. holosericeum Simon, 1882 R2a 425 ♀ (1)

Rec: Assuan

Ref: 1. M. h. Simon, 1882 pp. 257-8 pl. 8 f. 21-22 Dq Assouan

Genus **Minosia** Dalmas, 1920

M. pharao Dalmas, 1920

(Crosbyellum p.) R2a 359 ♂♀ (1)

Rec: Alexandria, Cairo

Ref: 1. M. p. Dalmas, 1920 pp. 303-4 f. 102, 107, 108 D♂♀ Cairo, Alexandria

Genus **Minosiella** Dalmas, 1920

M. mediocris Dalmas, 1920 (T) R2a 371 ♂♀ (1)

Rec: Cairo, El-Fayum, Siwa Oasis, Suez

Ref: 1. M. m. Dalmas, 1920 pp. 311-2 f. 113, 118 D♂♀ Cairo, Suez, Fayoum

2. M. m. Denis, 1947b p. 64 N Siwa

M. pharia Dalmas, 1920 R2a 371 ♀ (1)

Rec: Cairo

Ref: 1. M. p. Dalmas, 1920 p. 313 f. 115 Dq Cairo

Genus **Nomisia** Dalmás, 1920

N. marginata (Cambridge, 1874) R2a 372 ♂♀ (5)

Rec: Alexandria, Cairo

Ref: 1. Gnaphosa m. Cambridge, 1876 p. 551 N among the ruins of
an old wall near Cairo

2. N.m. Dalmás, 1920 pp. 296-7 f. 79, 98 D♂♀ Alexandria, Cairo

N. recepta (Pavesi, 1880) R2a 373 ♂♀ (2)

Rec: ---

Ref: 1. N.m. Dalmás, 1920 pp. 283-4 f. 66, 86, 87 D♂♀ Egypt

Genus **Poecilochroa** Westring, 1874

P. antineae Fage, 1929 R2a 429 ♂ (1)

Rec: ---

Ref: 1. P.a. Fage, 1929 pp. 248-9 f. 1 D♂ Egypt

P. campestrata (Cambridge, 1874) R2a 429 ♂ (1)

Rec: Alexandria

Ref: 1. Drassus c. Cambridge, 1876 p. 551 N under a stone near
Alexandria

P. lesserti Denis, 1947 R2a 430 ♂♀ (1)

Rec: Siwa Oasis

Ref: 1. P.l. Denis, 1947b pp. 62-3 pl. 3 f. 8-10 D♂♀
Siwa, Khamissa, Shiata

P. monodi Fage, 1929 R2a 430 ♂♀ (1)

Rec: Cairo, El-Fayum

Ref: 1. P.m. Fage, 1929 pp. 249-250 f. 2, 3 D♂♀ Cairo, Fayoum

P. pugnax (Cambridge, 1874) R2a 430 ♂♀ (3)

Rec: Cairo

Ref: 1. Drassus p. Cambridge, 1876 p. 552 N among the debris of
an old wall at Cairo

Genus **Pterotricha** Kulczynski, 1903

P. aegyptiaca Dalmás, 1920 R2a 375 ♂♀ (1)

Rec: Lower Egypt

Ref: 1. P.a. Dalmás, 1920 pp. 258-9 f. 23, 41 D♂♀ Lower Egypt

2. P.a. Caporiacco, 1928 p. 89 N Egypt

P. conspersa (Cambridge, 1872) R2a 375 ♂♀ (3)

Rec: Cairo, Gizeh

Ref: 1. Gnaphosa c. Cambridge, 1872a pp. 230-1 pl. 15 f. 5 D♂♀
under stones close to the pyramids of Gizeh, near Cairo

2. Gnaphosa c. Cambridge, 1876 p. 550 N under stones near
the pyramids of Gizeh

3. P.c. Dalmás, 1920 pp. 257-8 f. 22 D♀ Egypt

4. P.c. Denis, 1944 p. 47 N Helouan, near Cairo

P. isiaca Dalmás, 1920 R2a 375 ♀ (2)

Rec: Lower Egypt, Siwa Oasis

Ref: 1. P.i. Dalmás, 1920 p. 259 f. 24 D♀ Lower Egypt

2. P.i. Denis, 1947b p. 63 pl. 4 f. 5 D♂ N♀ Siwa

P. lentiginosa (C.L. Koch, 1837) (T) R2a 375-6 ♂♀
(8)

Rec: ---

Ref: 1. Gnaphosa l. Pavesi, 1878 pp. 378-9 N Egypt

P. linnaei (Audouin, 1825) R2a 376 ♀ (2)

Rec: ---

Ref: 1. Drassus l. Audouin, 1825 p. 156 pl. 5 f. 7 D♀

P. procera (Cambridge, 1874) R2a 376 ♂♀ (3)

Rec: Alexandria, Cairo

Ref: 1. Gnaphosa p. Cambridge, 1876 p. 550 N under stones
near Alexandria

2. P.p. Dalmás, 1920 p. 256 f. 20, 39, 40 D♂♀ Cairo, Alexandria

- P. schaefferi (Audouin, 1825) R2a 377 ♂♀ (7)
 Rec: Alexandria, Assuan, Cairo, Suez, Wadi Halfa
 Ref: 1. Drassus s. Audouin, 1825 p. 156 pl. 5 f. 5 D♀
 2. P.s. Simon, 1907 p. 4 N Cairo, Assuan, Wadi-Halfa
 3. P.s. Dalmas, 1920 pp. 260-1 f. 26, 42 D♂♀
 Cairo, Alexandria, Suez
 4. P.s. Caporiacco, 1928 p. 89 N Egypt

Genus **Scotophaeus** Simon, 1893

- S. mundulus (Cambridge, 1872) R2a 434 ♀ (3)
 Rec: Cairo
 Ref: 1. Drassus m. Cambridge, 1872a pp. 234-5 pl. 15 f. 11 D♂♀
 among debris of an old wall at Cairo
 2. Drassus m. Koch, 1875 p. 49 N near Cairo
 3. Drassus m. Cambridge, 1876 p. 551 N among the ruins of
 an old wall at Cairo
 4. S.m. Caporiacco, 1928 p. 85 N Egypt

- S. senilis (Cambridge, 1872) R2a 435 ♀ (1)
 Rec: Alexandria

- Ref: 1. Drassus s. Cambridge, 1872a pp. 236-7 pl. 15 f. 13 D♀
 under a stone near Alexandria
 2. Drassus s. Cambridge, 1876 p. 551 N under a stone
 near Alexandria

- S. vulpinus (Cambridge, 1874) R2a 436 ♀ (1)

- Rec: Cairo
 Ref: 1. Drassus v. Cambridge, 1876 p. 552 N in an old building
 at Cairo

Genus **Talanites** Simon, 1893

- T. ornatus (Cambridge, 1874) R2a 407 ♂ (1)

Rec: Alexandria

- Ref: 1. Drassus o. Cambridge, 1876 p. 551 N under a piece of
 stone near Alexandria
 2. Drassus o. Dalmas, 1919 p. 250 N (=T.o.)

Genus **Trachyzelotes** Lohmander, 1944

- T. lyonneti (Audouin, 1825) P 487 ♂♀ (1)
 (Zelotes l.) R2a 453 ♂♀ (6)

Rec:---

- Ref: 1. Drassus l. Audouin, 1825 p. 156 pl. 5 f. 6 D♂
T. jaxartensis (Kroneberg, 1875) P 486-7 ♂♀ (11)

Rec: Assiut, Luxor

- Ref: 1. Zelotes sorex Denis, 1944 pp. 46-7 pl. 1 f. 12 D♀ Louksor
 2. T.j. Platnick & Murphy, 1984 pp. 10-13 f. 19-22 D♂♀ Luxor,
 Kafr ash Shaykh (?); Asyut (pitfall traps in sugar cane)

Genus **Urozelotes** Mello-Leitão, 1938

- U. rusticus (L. Koch, 1872) P 488 ♂♀ (10)
 (Zelotes r.) R2a 461 ♂♀ (16)

Rec: Matruh, Siwa Oasis

- Ref: 1. Z. razoumowskyi Denis, 1947b pp. 60-1 pl. 3 f. 7 D♀ Siwa
 2. U.r. Platnick & Murphy, 1984 pp. 24-27 f. 55-58 D♂♀
 Matruh : Siwa(?)

Genus **Zelotes** Gistel, 1848

- Z. curinus (Cambridge, 1874) R2a 448 ♂ (1)

Rec: Alexandria

- Ref: 1. Prothesima c. Cambridge, 1876 p. 552 N under a stone
 at Alexandria
 2. Prothesima c. Pavesi, 1883 p. 52 N Egypt

2. *inauratus* (Cambridge, 1872) R2a 451 ♂ (2)

Rec: Alexandria, Lower Egypt

Ref: 1. *Melanophora* i. Cambridge, 1872a pp. 246-7 pl. 16 f. 26 D³_q
under a stone near Alexandria

2. *Prothesima* i. Cambridge, 1876 p. 553 N under stones
near Alexandria

3. *Prothesima* i. Simon, 1892 p. 234 N Lower Egypt

Z. intricatus Denis, 1947 R2a 451 p (1)

Rec: Siwa Oasis

Ref: 1. Z.i. Denis, 1947b p.61 pl.4 f.4 Do marsh at Khamissa

Z. laetus (Cambridge, 1872) R2a 451 ♂o (2)

Rec: Cairo

Ref: 1. Melanophora 1. Cambridge, 1872a pp. 241-2 pl. 15 f. 19 Ddo
Cairo

2. *Prosthesima* 1. Cambridge, 1876 p. 552 N under stones
near Cairo

Z. listeri (Audouin, 1825) R2a 452 q (4)

Rec: Sinai(southern)

Ref: 1. Drassus 1. Audouin, 1825 p.155 pl.5 f.4 Dg

2. *Drassus* l. Cambridge, 1870 p. 819 N Convent gardens
and back of Mount Sinai

2. *nilicola* (Cambridge, 1874) R2a 454 ♂ (6)

Rec: Alexandria, Nile Delta

Ref: 1. Prothesima n. Cambridge, 1876 p.552 N under a stone
near Alexandria

2. Z.n. Dalmas, 1922 pp. 84-5 N Alexandria, Nile Delta

2. picus (Cambridge, 1872) R2a 455 p (2)

Rec: Alexandria

Ref: 1. *Melanophora* p. Cambridge, 1872a p.242 pl.16 f.20 Dg
under a stone near Alexandria

2. *Prothesima* p. Cambridge, 1876 p.552 N
under a stone near Alexandria

2. simplex Denis, 1936 R2a 459 ♂ (2)

Rec: Siwa Oasis

Ref: 1. Z.s. Denis, 1936 p. 1036 pl. I f. 3 Doo (Algeria)

2. Z.s. Denis, 1947b pp. 59-60 No Siwa

Z. tenuis (L. Koch, 1866) R2a 459 ♂ (1), P 495 ♂♀ (1)
(Z. pallidus) R2a 454 ♂♀ (1) = Z. t. P 489

Rec: Alexandria

Ref: 1. *Prothesima pallida* Cambridge, 1876 p.553 N
under stones near Alexandria

2. *tristiculus* (Cambridge, 1874) R2a 450 ♂ (1)

Rec: Alexandria

Ref: 1. Prothesima t. Cambridge, 1876 p.552 N
under a piece of rock near Alexandria

Family **Hersiliidae**

Genus *Hersilia* Savigny, 1825

H. caudata Savigny, 1825 (T) R1 381 ♂♀ (6)

Rec: Cairo to Assuan

Ref: 1. H.c. Audouin, 1825 p.115 pl.1 f.8 D₂ near Cairo

2. H.c. Cambridge, 1876 pp. 560-2 pl. 58 f. 6 Dg
Cairo to Assuan

3. H.c. Simon, 1982 pp. 227-8 Dg Cairo

4. H.c. Simon, 1907 p. 5 N Cairo

Genus *Hersiliola* Thorell, 1870

H. _____ *lucasi* (Cambridge, 1876) R1 383 ♂♀ (2)

Rec: Alexandria

- Ref: 1. *Hersilidia* l. Cambridge, 1876 pp. 562-4 pl. 58 f. 5 D♂♀
under stones in desert between Alexandria and Ramleh
2. *Hersilidia* l. Caporiacco, 1928 p. 90 N Egypt

Family *Heteropodidae*Genus *Cebrennus* Simon, 1880

C. _____ *aethiopicus* Simon, 1880 R2a 688 ♂ (2) Nubien

Rec: ---

C. _____ *sparassoides* Caporiacco, 1928 R2a 688 ♂ (1)

Rec: ---

- Ref: 1. *C.s.* Caporiacco, 1928 pp. 94-5 f. 6 D♂ (Porto Bardia) Sinai

Genus *Cerbalus* Simon, 1897

C. _____ *concolor* Denis, 1947 R2a 688 ♂ (1)

Rec: Siwa Oasis

- Ref: 1. *C.c.* Denis, 1947b pp. 52-3 pl. 3 f. 1-3 D♂

Siwa, near Zeitoun, sand dunes

2. *C.c.* Kritscher, 1960 p. 272 N♂

C. _____ *pellitus* Kritscher, 1960 B 593 ♂ (1)

Rec: Fayed (near Suez)

- Ref: 1. *C.p.* Kritscher, 1960 pp. 272-4 f. 1-2 D♂ Fayed, sand dunes

C. _____ *pulcherrimus* (Simon, 1880) (T) R2a 689 ♀ (4)

Rec: Assuan, Wadi Natron

- Ref: 1. *C.p.* Strand, 1908b pp. 9-10 D♂ (immature ♂) Wadi-Natron

2. *C.p.* Kritscher, 1960 pp. 274-8 f. 3-5 D♂♀ Assuan

Genus *Eusparassus* Simon, 1903

E. _____ *bicorniger* (Pocock, 1898) R2a 674 oo (2) Egypt

Rec: ---

E. _____ *cognatus* (Cambridge, 1876) R2a 672 oo (1)

Rec: Cairo, Upper Egypt

- Ref: 1. *Sparassus c.* Cambridge, 1876 p. 588 Doo

near Cairo and in Upper Egypt

E. _____ *dufourii* Simon, 1932 (T) R2a 672-3 ♂♀ (9)

Rec: ---

- Ref: 1. *Sparassus angelasii* Pavesi, 1878 p. 381 N Egypt

E. _____ *d.* _____ *oraniensis* (Lucas, 1846) R2a 673 ♂♀ (7)

Rec: Siwa Oasis

- Ref: 1. *E.d.o.* Denis, 1947b pp. 49-50 pl. 2 f. 12 N♀ Siwa

E. _____ *suavis* (Cambridge, 1876) R2b 1658 nicht zu
deuten!

Rec: Upper Egypt

- Ref: 1. *Sparassus s.* Cambridge, 1876 pp. 588-590 D♂♀
at the roots of scattered tufts of herbage on the
desert near Gebel y Silsilis, in Upper Egypt

E. _____ *walckenaerii* (Audouin, 1825) R2a 674 ♂♀ (9)

Rec: Cairo, Sinai, Siwa Oasis, Wadi Natron

- Ref: 1. *Philodromus w.* Audouin, 1825 pp. 159-160 pl. 6 f. 1 D♀

2. *Philodromus linnaei* Audouin, 1825 pp. 160-1 pl. 6 f. 2 D♂

3. *Sparassus linnaei* Cambridge, 1870 p. 819 N

Hot springs, Pharaoh's Baths, Cairo (Sinai)

4. *Sparassus w.* Cambridge, 1872a p. 311 N under stones;
on board the Nile boat (Dahabeah)

5. *Sparassus* w. Cambridge, 1876 pp. 587-8 N under stones:
on board the Nile boat (Dahabeah)
6. *Sparassus* w. Simon, 1899 p. 244 N Bir-Hooker (Wadi Natron)
7. E.w. Simon, 1907 p. 7 N Cairo
8. E.w. Strand, 1908b pp. 24-5 D♂ Bir-Hooker (Wadi Natron)
9. E.w. Denis, 1947b pp. 50-1 pl. 2 f. 14-16 N♂ Siwa

Genus *Olios* Walckenaer, 1837

O. impediens Denis, 1947 R2a 692 ♀ (1)

Rec: Siwa Oasis

Ref: 1. O.i. Denis, 1947b p. 52 pl. 2 f. 17 D♀
Siwa, Ilrhabit Unconde

Genus *Palystes* L. Koch, 1875

P. crucifer Simon, 1880 R2a 727 ♀ (2) (Port Said?)

Rec:---

Family Linyphiidae

Genus *Bathypantes* Menge, 1866

B. extricatus (Cambridge, 1876) R1 569 ♂♀ (2)

Rec: Alexandria, Cairo

Ref: 1. Linyphia e. Cambridge, 1876 pp. 572-3 pl. 59 f. 7 D♂♀
on plants and shrubs, at Cairo and Alexandria

Genus *Erigone* Savigny, 1825

E. dentipalpis (Wider, 1834) R1 722 ♂♀ (16)

Rec:---

Ref: 1. E.d. Denis, 1948 p. 588 N Egypt

Genus *Gnathonarium* Karsch, 1881

G. dentatum (Wider, 1834) (T) R1 654 ♂♀ (23)

G. d. orientale Cambridge, 1872 R1 654 ♂♀ (1)

Rec:---

Ref: 1. *Erigone d.o.* Cambridge, 1872a p. 290 D♂♀ Egypt

Genus *Meioneta* Hull, 1920

M. rurestris (C.L. Koch, 1836) R1 518 ♂♀ (16)

Rec: Alexandria

Ref: 1. *Erigone r.* Simon, 1880a p. 48 N near Alexandria

Genus *Prinerigone* Millidge, 1988

P. vagans (Savigny, 1825) (T)
(*Erigone v.*) (T) R1 724 ♂♀ (13)

Rec: Alexandria, Cairo, Wadi Natron

Ref: 1. *Erigone v.* Audouin, 1825 pp. 116-7 pl. 1 f. 9 D♂
gardens of Cairo

2. *Erigone spinosa* Cambridge, 1872a p. 292 pl. 13 f. 12 D♂♀
Cairo and Alexandria

3. *Erigone spinosa* Cambridge, 1876 p. 572 N♂
running on the metals and permanent way of
the railroad near Cairo and Alexandria

4. *Erigone v.* Simon, 1899 p. 244 N Bir-Hooker (Wadi Natron)

5. *Erigone v. spinosa* Denis, 1948 pp. 588-590 N

Genus *Silometopus* Simon, 1914

S. curtus (Simon, 1891) R1 680 ♂ (4) Egypt

Rec:---

Genus *Tapinocyba* Simon, 1884

T. alexandrina (Cambridge, 1872) R1 701 ♂♀ (4)

Rec: Alexandria

Ref: 1. *Erigone a.* Cambridge, 1872b pp. 755-6 pl. 65 f. 11 D♂♀
among water-weeds in a swamp near Alexandria

2. *Erigone a.* Cambridge, 1876 p. 572 N♂ on rushes and
other plants growing in a marsh near Alexandria

Family **Liocranidae**Genus **Mesiotelus** Simon, 1897M. alexandrinus (Simon, 1890) R2a 566 ♀ (1)

Rec: Edko (near Alexandria)

Ref: 1. *Liocranum a.* Simon, 1880c p.99 D♀ Edko near AlexandriaM. tenuissimus (L.Koch, 1866) (T) R2a 567 ♂♀ (10)

Rec: Alexandria

Ref: 1. *Cheiracanthium t.* Cambridge, 1876 p.553 N Alexandria2. *Chiracanthium t.* Pavesi, 1878 p.377 N EgyptFamily **Loxoscelidae**Genus **Loxosceles** Heineken & Lowe, 1835L. rufescens (Dufour, 1820) (T) R1 319 ♂♀ (17)

Rec: Alexandria, Cairo, Siwa Oasis

Ref: 1. *Scytodes r.* Audouin, 1825 pp.153-4 pl.5 f.2 D♀2. *L.r.* Cambridge, 1876 p.564 N near Cairo and Alexandria3. *L.erythrocephala* Pavesi, 1878 p.373 N Egypt4. *L.r.* Simon, 1910 p.307 N Egypt5. *L.r.* Denis, 1947b p.26 N♂♀ Siwa OasisFamily **Lycosidae**Genus **Allocosa** Banks, 1900A. deserticola (Simon, 1898) R2a 201 ♀ (1)

Rec: Saqqarah (near Gizah)

Ref: 1. *Lycosa d.* Simon, 1898 p.28 D♀ Saqqarah desertA. sennaris Roewer, 1959 B 434 ♀ (1) Egypt

Rec:---

A. tarantulina (Savigny, 1825) R2a 202 ♂♀ (5)

Rec: Alexandria

Ref: 1. *Lycosa t.* Audouin, 1825 pp.143-5 pl.4 f.2 D♂♀
near Alexandria2. *Tarentula t.* Cambridge, 1876 p.601 N near Alexandria
in their cylindrical holes on waste and desert places3. *Lycosa t.* Simon, 1880a N near AlexandriaA. tremens (Cambridge, 1876) R2a 202 ♂♀ (3)

Rec: Alexandria

Ref: 1. *Tarentula t.* Cambridge, 1876 pp.602-3 D♀ near AlexandriaGenus **Alopecosella** Roewer, 1954A. pelusiaca (Savigny, 1825) R2a 225 ♀ (3)

Rec: El Manzalah

Ref: 1. *Lycosa p.* Audouin, 1825 p.148 pl.4 f.8 D♀
on shores of Menzaleh lakeGenus **Arctosa** C.L.Koch, 1848A. cinerea (Fabricius, 1776) (T) R2a 227-8 ♂♀ (47)

Rec: Sinai, Siwa Oasis, Upper Egypt, Wadi Natron

Ref: 1. *Lycosa pilipes* Cambridge, 1870 p.819 N
Wady Gherandel, peninsula Sinai, Nasb, Genneh,
Jebel Musa, and at Pharaoh's Baths, Cairo2. *Trochosa pilipes* Cambridge, 1876 p.600 N under stones on
the damp sandy flats bordering the Nile in Upper Egypt3. *Lycosa c.* Simon, 1899 p.244 N Bir-Hooker (Wadi Natron)4. *A.c.* Denis, 1947b pp.35-6 N SitraA. depuncta (Cambridge, 1876) R2a 225 ♂♀ (2)

Rec: Alexandria

Ref: 1. *Trochosa d.* Cambridge, 1876 p.600 D♂♀ near Alexandria

A. leopardus (Sundevall, 1832) P 364 ♂♀ (1)
(Megarctosa l.) R2a 277-8 ♂♀ (25)

Rec: Alexandria

Ref: 1. Pirata l. Cambridge, 1876 p. 598 N in a marsh,
near Alexandria

A. quadripunctata (Lucas, 1846) R2a 227 ♂♀ (3)

Rec: Siwa Oasis

Ref: 1. A. q. Denis, 1947b p. 36 pl. 1 f. 9-10 D♂♀
Siwa, Aghourmih salt marsh, Abu Sheruf,
Baharein: East Lake shore

Genus Aulonia C.L. Koch, 1848

A. weneri Roewer, 1960 B 441 ♀ (1) Egypt

Rec: ---

Genus Crocodilosa Caporiacco, 1947

C. virulenta (Cambridge, 1876) R2a 238 ♂♀ (1)

Rec: Cairo

Ref: 1. Trochosa v. Cambridge, 1876 pp. 600-1 D♂♀ near Cairo

Genus Evippa Simon, 1882

E. arenaria (Savigny, 1825) (T) R2a 154 ♀ (5)

Rec: Rosetta

Ref: 1. Lycosa a. Audouin, 1825 p. 146 pl. 4 f. 3 D♀
from the desert near Rosetta

E. peregrina (Savigny, 1825) R2a 154 ♀ (2)

Rec: Rosetta

Ref: 1. Lycosa p. Audouin, 1825 p. 146 pl. 4 f. 4 D♀
near Rosetta

E. praelongipes (Cambridge, 1870) R2a 155 ♂ (3)

Rec: Sinai

Ref: 1. Lycosa p. Cambridge, 1870 pp. 822-3 pl. 50 f. 3 D♂
Wady Nasb, Genneh, near Jebel Musa, peninsula Sinai
2. E. p. Caporiacco, 1928 p. 97 N Sinai

E. unguolata (Cambridge, 1876) R2a 155 ♀ (5)

Rec: Assuan, Luxor, Siwa Oasis, (Upper Egypt)

Ref: 1. Lycosa u. Cambridge, 1876 pp. 603-4 D♀ immature
at the roots of stunted herbage on the desert
near Jebel y Silsilis, in Upper Egypt

2. E. u. Simon, 1882 p. 223 N Assouan, Thebes
(widely distributed in Upper Egypt)

3. E. u. Denis, 1947b p. 39 pl. 1 f. 14 N♀ Gagub

Genus Geolycosa Montgomery, 1904

G. urbana (Cambridge, 1876) R2a 241-2 ♂♀ (7)

Rec: Alexandria, Siwa Oasis

Ref: 1. Lycosa agretica Audouin, 1825 p. 147 pl. 4 f. 6 D♀
on the banks of the canal of Alexandria

2. Trochosa u. Cambridge, 1876 p. 601 pl. 60 f. 14 D♂♀ among
low plants and other herbage in a marsh near Alexandria

3. Trochosa u. Pavesi, 1883 pp. 68-69 N Egypt

4. Lycosa u. Simon, 1907 p. 8 N very common in Egypt

5. Lycosa u. Denis, 1947b pp. 32-4 pl. 1 f. 6, 7 N♂ Siwa,
Ultahu Hirfol, Anas Yutra, Tarterad Hamid Bakour

Genus Hippasa Simon, 1885

H. innesi Simon, 1889 R2a 311 ♀ (1)

Rec: Cairo, Suez

Ref: 1. H. i. Simon, 1889 pp. 378-9 D♀ Suez, Cairo

H. partita (Cambridge, 1876) R2a 311 5p (3)

Rec: Alexandria

Ref: 1. *Trochosa* p. Cambridge, 1876 pp. 599-600 Dg
near Alexandria

Genus *Hyaenosa* Caporiacco, 1940

H. _____ *effera* (Cambridge, 1872) R2a 260 ♂♀ (1)

Rec: Alexandria, Cairo

Ref: 1. Lycosa e. Cambridge, 1972a pp. 318-9 Doo

2. *Trochosa* e. Cambridge, 1876 p. 601 N
near Cairo and Alexandria

Genus *Lycorma* Simon, 1885

L. _____ alexandria Roewer, 1960 B 447 p (1) Egypt

Rec: ---

L. ferox (Lucas, 1838) R2a 265 dp (10)

Rec: Siwa Oasis, Wadi Natron

Ref: 1. *Lycosa* f. Simon, 1899 p.244 N Bir-Hooker (Wadi Natron)

2. *Lycosa* f. Denis, 1947b p.32 pl.1 f.3-5 Ngq Siwa

Genus *Lycosa* Latreille, 1804

L. *cingara* (C.L.Koch, 1848) R2a 268 ♀ (1) Egypt

Rec : ---

L. cretacea Simon, 1898 R2a 268 q (2)

Rec: Saggarah (near Gizah)

Ref: 1. L.c. Simon, 1898 p.27 Do Saccarah desert

L. nilotica Savigny, 1825 R2a 269 q (1)

Rec: Alexandria, Assuan, Cairo

Ref: 1. L.n. Audouin, 1825 pp. 147-8 pl. 4 f. 7 Dp
on the banks of the canal of Alexandria

2. Linn Simon, 1907 p.8 N. Cairo, Assouan
(common in the Nile valley)

L. radiata Latreille, 1819

(Hogna r.) (T) R2a 249 ♂ (31)

Rec: Cairo

Ref: 1. Tarentula r. var. liguriensis Pavesi, 1878 p. 385 N Egypt

2. L.r. Simon, 1907 p.8 N Cairo

L. sinaia (Roewer, 1959)

(Hogna s.) B 444 p (1) Egypt (Sinai)

Rec : ---

L. tarentula (Rossi, 1790) (T) R2a 270 ♂♂ (13)

Rec: Sinai (southern)

Ref: 1. L. t. apuliae Cambridge, 1870 p. 820 N in an old wall,
Wady Ferran, peninsula Sinai

L. truculenta (Cambridge, 1876)

(Hogna t.) R2a 250 o (1)

Rec: Alexandria

Ref: 1. Tarentula t. Cambridge, 1976 pp. 601-2 Do (immature g)
near Alexandria

Genus *Megarctosa* Caporiacco, 1948

M. argentata (Denis, 1947) R2a 277 ♀ (1)

Rec: Siwa Oasis

Ref: 1. *Arctosa* a. Denis, 1947b pp.36-7 pl.6 f.1 Dq Sitra

Genus *Ocyale* Savigny, 1825

O. atlantica Savigny, 1825 (T) R2a 280 ♂♀ (13)

Rec: Wadi Natron

Ref: 1. O. Audouin, 1825 p.150 pl.4 f.10 Dg (near Jaffa)

2. *Trochosa maculata* L.Koch, 1875 pp.78-80 pl.7 f.5 Dq
(Habab, Abyssinea)
3. *Trochosa lactea* L.Koch, 1875 pp.80-82 pl.7 f.6 Dq
(Habab, Abyssinea)
4. O.a. Simon, 1899 p.244 N Bir-Hooker (Wadi Natron)
O. _____ pelliona (Savigny, 1825) R2a 280 q (4)

Rec: Rosetta

- Ref: 1. *Lycosa* p. Audouin, 1825 pp.146-7 pl.4 f.5 Dq
near Rosetta

Genus *Orinocosa* Chamberlin, 1916

- O. _____ priesneri* Roewer, 1959 B 451 ♂ (1) Egypt

Rec: ---

Genus *Orthocosa* Roewer, 1954

- O. _____ ambigua* (Denis, 1947) R2a 281 q (1)

Rec: Siwa Oasis

- Ref: 1. *Arctosa* a. Denis, 1947b p.34 pl.1 f.8 Dq
Siwa, Sitra, Ilrhabit Reseur.

Genus *Pardosa* C.L.Koch, 1848

- P. _____ iniqua* (Cambridge, 1876) R2a 164 q (1)

Rec: Alexandria

- Ref: 1. *Lycosa* i. Cambridge, 1876 pp.605-6 Dq under a stone
near Alexandria

- P. _____ injucunda* (Cambridge, 1876) R2a 177 ♂q (4)

Rec: Alexandria, Cairo, Siwa Oasis

- Ref: 1. *Lycosa* i. Cambridge, 1876 p.605 pl.60 f.15 D♂q
near Cairo and Alexandria
2. P.i. Denis, 1947b p.39 N Girba, Khamissa, Zeitoun
P. _____ inopina (Cambridge, 1876) R2a 177 ♂q (2)

Rec: Alexandria, Wadi Natron

- Ref: 1. *Lycosa* i. Cambridge, 1876 pp.607-8 pl.60 f.16 D♂q
common near Alexandria
2. P.i. Simon, 1899 p.244 N Bir-Hooker (Wadi Natron)
P. _____ inquieta (Cambridge, 1876) R2a 164 ♂ (1)

Rec: Alexandria

- Ref: 1. *Lycosa* i. Cambridge, 1876 pp.606-7 D♂ near Alexandria
P. _____ observans (Cambridge, 1876) R2a 169 ♂q (2)

Rec: Alexandria

- Ref: 1. *Lycosa* o. Cambridge, 1876 pp.608-9 D♂q near Alexandria
P. _____ serena (L.Koch, 1875) R2a 173 o (1)

Rec: Cairo

- Ref: 1. *Lycosa* s. Koch, 1875 pp.71-2 D♂ (immature q) near Cairo

Genus *Pirata* Sundevall, 1833

- P. _____ proxima* Cambridge, 1876 R2a 284 q (1)

Rec: Alexandria

- Ref: 1. P.p. Cambridge, 1876 pp.598-9 Dq in a swamp
near Alexandria

Genus *Trochosa* C.L.Koch, 1846

- T. _____ annulipes* L.Koch, 1875 R2a 304 q (2)

Rec: Cairo

- Ref: 1. T.a. Koch, 1875 pp.77-8 pl.7 f.4 Dq near Cairo
2. T.a. Pavesi, 1883 p.69 N Egypt

Genus *Wadicosa* Zyuzin, 1985

W. venatrix (Lucas, 1846) P 392 ♂ (2)
(Pardosa fidelis) R2a 175 ♂ (1)
(Pardosa v.) R2a 178 ♂ (6)
(Pardosa kraepelini) B 453 ♂ (1)

Rec: Alexandria, Assuan, Cairo, Siwa Oasis, Suez, Wadi Natron

Ref: 1. *Lycosa fidelis* Cambridge, 1872a pp.319-320 D5

found abundantly near Cairo

2. *Lycosa galerita* Koch, 1875 pp. 69-71 pl. 7 f. 1 D♂

near Cairo

3. *Lycosa fidelis* Cambridge, 1876 pp. 604-5 N frequent.

both in the neighbourhood of Cairo and Alexandria

4. *Fardosa v. Simon*, 1899 p.244 N Bir-Hooker (Wadi Natron)

5. Pardosa v. Simon, 1907 p.9 N. Cairo, Assouan

6. Fardosa v. Denis, 1947b pp. 37-8 pl. 1 f. 11-13 N3o

Siwa, Abu Sheruf, Maragi, Baharsini: East Lake shore

[Suez : Simon, 1876]

Family Minetidae

Genus *Mimetus* Hentz, 1832

M. monticola (Blackwall, 1870) R1 1020 ♀ (3)

Rec: Cairo

Ref: 1. M.m. Cambridge, 1876 p.571 N on a prickly-pear plant
near Cairo

Family Mysmenidae

Genus *Synaphris* Simon, 1894

S. _____ *letourneuxi* (Simon, 1884) R1 394 ♂ (2)

Rec: ---

Ref: 1. S.I. Simon, 1894 Hist. Nat. Ar., I(3) p. 589 N Egypt

Family Decobiidae

Genus *Oecobius* Lucas, 1846

0. annulipes Lucas, 1846 R2b 1288 ♂ (13)

Rec: Alexandria, Upper Egypt

Ref: 1. O. teliger Cambridge, 1872a p.221 pl.13 f.8 Dsp on stones

2. *O. affinis* Cambridge, 1872a pp. 221-2 Doo on stones

3. *O. albipunctatus* Cambridge, 1872a p. 222 Dq on stones

4. O. a. Cambridge, 1876 p. 546 N under a stone, Upper Egypt.

5. O.a. Simon, 1910 p.285 N Egypt, under stones,
sometimes in houses

6. O.a. Hassan, 1953 pp.21-4 f.3 D5g Egypt

7. O. a. Kritscher, 1966 pp. 285-7 f. 1-3 Ddp

8. O.a. Brignoli, 1979 p.123 N on a wall

Bacos, Ramleh near Alexandria

O. a. *maculatus* Simon, 1870 R2b 1288 ♂ (6)

Rec : Gizati

Ref: 1. *O. trimaculatus* Cambridge, 1872a p 219-221 pl 13 f. 7 DdQ

2. O.m. Simon, 1910 p. 285 N Egypt

3. O. a. m. Hassan, 1953 pp. 24-7 f. 4 Ddg
near pyramids of Giza

0. putus Cambridge, 1876 R2b 1289 3p (3)

Rec: Cairo, Gizah, Upper Egypt

Ref: 1. O. p. Cambridge, 1976 pp. 544-5 pl. 58 f. 1 Ddg
on the walls of one of the temples of Upper
Egypt, between Denderah and Assouan

2. O.p. Simon, 1907 p.1 N Cheops pyramid, near Cairo
3. O.p. Simon, 1910 p.285 N Temple of Philae, Cairo
in houses and under stones
4. O.p. Hassan, 1953 pp.19-21 f.2 D♂q Egypt
5. O.p. Kritscher, 1966 pp.290-1 f.11,12 D♂
Upper Egypt, ruins of Temple of Philae
- O. _____ templi Cambridge, 1876 R2b 1289 ♂q (2)

Rec: Upper Egypt (near Assuan)?

- Ref: 1. O.t. Cambridge, 1876 pp.545-6 pl.58 f.2 D♂q among
the ruins of the Temple of Philae, in Upper Egypt?
2. O.t. Simon, 1910 p.286 N Egypt
 3. O.t. Hassan, 1953 pp.16-9 f.1 D♂q Egypt
 4. O.t. Kritscher, 1966 p.293-4 f.19-21 D♂q Egypt
 5. O.t. Brignoli, 1979 pp.124-5 f.1-4 N♂q Egypt

Family Donopidae

Genus **Dysderina** Simon, 1891

D. _____ scutata (Cambridge, 1876) R1 282 ♂q (1)

Rec: Alexandria

- Ref: 1. Donops s. Cambridge, 1876 pp.547-9 pl.58 f.2A D♂q
under stones, near Alexandria
2. D.s. Simon, 1910 p.310 N Alexandria

Genus **Gamasomorpha** Karsch, 1881

G. _____ arabica Simon, 1893 R1 284 ♂ (1)

Rec: Ain-Musa (near Suez)

- Ref: 1. G.a. Simon, 1893 pp.302-3 D♂ Ain-Mouça, near Suez!
2. G.a. Simon, 1910 p.309 N Ain-Mouça, near Suez!
- G. _____ margaritae Denis, 1947 B 183 ♀ (1)

Rec: Siwa Oasis

- Ref: 1. G.m. Denis, 1947b p.83 pl.4 f.13-15 D♀ Siwa

Genus **Opopaea** Simon, 1891

O. _____ punctata (Cambridge, 1872) R1 288 ♂q (4)

Rec: Ain-Musa (near Suez), Alexandria

- Ref: 1. Donops p. Cambridge, 1872a pp.223-4 pl.14 f.3A D♂
2. O.p. Simon, 1910 p.309 N Alexandria, Ain-Mouça

Genus **Sulsula** Simon, 1882

S. _____ paupera (Cambridge, 1876) R1 281 ♂q (4)

Rec: Alexandria

- Ref: 1. Donops p. Cambridge, 1876 pp.549-550 D♀ Alexandria
under a stone
2. S.p. Simon, 1910 p.308 N Alexandria

Family Oxyopidae

Genus **Oxyopes** Latreille, 1804

O. _____ bilineatus Cambridge, 1876 R2a 318 o (1)

Rec: Cairo

- Ref: 1. O.b. Cambridge, 1876 p.609 Do (immature ♀)
on branches of the sont acacia, near Cairo

O. _____ heterophthalmus (Latreille, 1804) (T) R2a 318 ♂q
(20)

Rec: Alexandria, Cairo, Sinai

- Ref: 1. Sphasus alexandrinus Audouin, 1825 pp.142-3 pl.4 f.1 D♀
from the desert, near Alexandria
2. Sphasus alexandrinus Cambridge, 1870 p.819 N
Jebel Musa, peninsula Sinai
 3. O.alexandrinus Cambridge, 1876 p.609 N near Cairo
on branches of the sont acacia

O. lineatus Latreille, 1806 R2a 319 ♂♀ (16)

Rec:---

Ref: 1. O.l. Pavesi, 1878 p.387 N Egypt

Genus Peucetia Thorell, 1869

P. arabica Simon, 1882 R2a 334-5 ♂♀ (6)

Rec: Cairo, Siwa Oasis, Suez

Ref: 1. P.a. Simon, 1907 p.9 N Cairo

2. P.a. Denis, 1947b pp.39-40 pl.1 f.15 N♀ Siwa
[Djebel Ataka near Suez : Simon, 1890]

P. viridis (Blackwall, 1858) (T) R2a 335 ♂♀ (6)

Rec: Sinai

Ref: 1. Pasithea v. Cambridge, 1870 p.819 N Jebel Musa, pen. Sinai

Family Palpimanidae

Genus Palpimanus Dufour, 1820

P. aegyptiacus Kulczynski, 1909 R1 377 ♂ (1)

Rec:---

Ref: 1. P.a. Platnick, 1981 pp.170-2 f.2,11 N♂♀ Egypt

[♂ holotype, MNHN Paris, from Egypt]

P. gibbulus Dufour, 1820 (T) R1 378 ♂♀ (10)

Rec: Alexandria, Cairo to Luxor, Nubia

Ref: 1. Platyscelum savignyi Audouin, 1825 pp.167-8 pl.7 f.6,7
D♂(♀)

2. P. haematinus Cambridge, 1876 p.554 N♀ near Alexandria

3. P. savignyi Cambridge, 1876 p.554 N♀ ascending the Nile
from Cairo to Thebes

4. P.g. Pavesi, 1878 p.389-390 N Egypt

5. P.g. Simon, 1882 p.228 N Nubia

6. P.g. Platnick, 1981 pp.170-2 f.1,10 N♂♀

P. uncatus Kulczynski, 1909 R1 378 ♂ (1)

Rec:---

Ref: 1. P.u. Platnick, 1981 pp.170,172 f.4,13 D♂♀ Egypt

[4♂♂ syntypes, MNHN Paris, from Egypt]

Family Philodromidae

Genus Philodromus Walckenaer, 1825

P. bigibbus (Cambridge, 1876) R2a 782 ♀ (2)

Rec: Alexandria, Assuan

Ref: 1. Artanes b. Cambridge, 1876 p.590 D♂(immature ♀)

among herbage, near Alexandria

2. P.b. Simon, 1907 p.7 N Elephantine (on Acacia nilotica)

P. cinereus Cambridge, 1876 R2a 773 ♀ (1)

Rec: Cairo

Ref: 1. P.c. Cambridge, 1876 pp.494-5 D♀ near Cairo

P. clerckii Audouin, 1825 R2b 1623 nicht zu
deuten!

Rec:---

Ref: 1. P.c. Audouin, 1825 p.159 pl.5 f.10 D♀

P. denisi Levy, 1977

Rec: Siwa Oasis

Ref: 1. Thanatus albinus Denis, 1947b p.58 pl.4 f.2,3 D♂♀
Baharein, East Lake shore

2. P.d. Levy, 1977 p.214 N (nomen novum)

F. glaucus Simon, 1870 R2a 776 ♂ (4)

Rec: Siwa Oasis, Upper Egypt

Ref: 1. *P. medius* Cambridge, 1876 p. 594 N upon the lower boughs
of the sont acacia, in Upper Egypt

2. P.g. Denis, 1947b p.57 N Siwa

3. F.g. Levy, 1977 pp.200-3 f.14-18 D39

P. lepidus Blackwall, 1870 R2a 782 ♂g (3)

Rec: Assuan, Cairo, wadi Natron

Ref: 1. P.1. Simon, 1899 p.244 N Bir-Hooker (Wadi Natron)

2. P.l. Simon, 1907 p.7 N Cairo; Elephantine

(on *Acacia nilotica*)

P. _____ lugens (Cambridge, 1876) R2a 778 o (2)

Rec: Alexandria

Ref: 1. Antares 1. Cambridge, 1876 p.591 Do (immature ♀)
near Alexandria

F. _____ *omer-cooperi* Denis, 1947 R2a 778 ♂ (1)

Rec: Siwa Oasis

Ref: 1. P.O. Denis, 1947b p.56 pl.3 f.4 D♂ Shiata

F. sinaiticus Levy, 1977 B 500 g (1)

Rec: Sinai

Ref: 1. P.s. Levy, 1977 pp.204-5 f.21,22 Dq

'En Hiqiva, Wadi Kid, Wadi Madsus

P. venustus Cambridge, 1876 R2a 780 ♂ (1)

Rec: Cairo to Manfalut

Ref: 1. P.v. Cambridge, 1876 pp.595-6 p1.59 f.12 D39

on the branches of the sout acacia, during the

ascent of the Nile, between Cairo and Manfaloot

Genus *Thanatus* C.L.Koch, 1837

T. albescens Cambridge, 1885 R2a 796 ♂ (2)

Rec: Sinai

Ref: 1. *T. fornicatus* Levy, 1977 pp. 224-6 f. 59, 60 Do

Sinai: near General Parker Memorial

T. *albini* (Audouin, 1825) R2a 790 ♂ (4)

Rec: Cairo

Ref: 1. Philodromus a. Audouin, 1825 p. 161 pl. 6 f. 4 ♂

2. T.a. Cambridge, 1876 p. 591 N among low herbage and running on bare spots, in various parts of Egypt.

3. T.a. Simon, 1907 p.7 N Cairo

4. T. vulgaris Levy, 1977 pp. 214-8 F. 43-47 Đồ

T. fabricii (Audouin, 1825) R2a 791 ♂g (4)

Rec: Alexandria, Siwa Oasis

Ref: 1. Philodromus f. Audouin, 1825 p.161 pl.6 f.3 D♂

2. *Philodromus adjacens* Cambridge, 1875 pp. 592-4 pl. 59 f. 11
Ddg. in desert places near Alexandria ("very difficult
to be seen except when moving, owing to the exact adapt-
ation of their colours to the surface of the ground")

3. T.f. Denis, 1947b p. 57-8 pl. 2 f. 18, pl. 3 f. 5, 6 Dđo

Siwa, Gara

4. *T. adjacens* Denis, 1947b p. 58 N Siwa

5. T. f. Levy, 1977 pp. 219-222 f. 50-54 Džb

T. *flavescens* Cambridge, 1876 R2a 791 o (1)

Rec: Cairo

Ref: 1.T.f. Cambridge, 1876 p.592 Do (immature ♂)

on a low bush near Cairo

T. flavus Cambridge, 1876 R2a 791 ♀ (1)

Rec: Alexandria

Ref: 1. T.f. Cambridge, 1876 p. 592 D♀ on low plants in a marsh.
near Alexandria

2. T.f. Pavesi, 1883 p. 57 N Egypt

T. formicinus (Clerck, 1757) R2a 794-5 ♂♀ (39)

Rec: ---

Ref: 1. Philodromus rhombiferens Audouin, 1825 pp 161-2 pl 6 f 5
D♀

Genus **Tibellus** Simon, 1875

T. lesserti Roewer, 1951 R2a 798 ♀ (3)

Rec: Cairo

Ref: 1. Thanatus lineatipes Cambridge, 1876 pp. 591-2 D♀
on a low plant near Cairo

T. vossioni Simon, 1884 R2a 800 ♂♀ (4)

Rec: Siwa Oasis

Ref: 1. T.v. Denis, 1947b pp. 58-9 N♀ El Arig

Family **Pholcidae**

Genus **Artema** Walckenaer, 1837

A. atlanta Walckenaer, 1837 (T) R1 334 ♂♀ (8)

(A. mauriciana) R1 333 ♂♀ (7)

(A. sisypoides) R1 334 ♂♀ (6)

(A. kochii) R1 334 ♀ (2)

Rec: Cairo, Siwa Oasis, Wadi Natron

Ref: 1. Pholcus borbonicus Koch, 1875 pp 25-6 pl 3 f 1 D♀
surroundings of Cairo

2. Pholcus borbonicus Simon, 1881 p 234 N

distributed abundantly in all Egypt

3. A. mauriciana Simon, 1899 p. 244 N Bir-Hooker (Wadi Natron)

4. A. mauriciana Denis, 1947b pp 26-7 N♂♀ Siwa

5. A. a. Brignoli, 1981 pp. 92-3 f 1-7 D♂♀

surroundings of Cairo

Genus **Crossopriza** Simon, 1893

C. semicaudata (Cambridge, 1876) R1 334 ♂♀ (3)

Rec: Cairo to Luxor

Ref: 1. Pholcus s. Cambridge, 1876 pp 565-6 D♂♀

Upper Egypt: Cairo to Thebes and above

2. Holocnemus s. Simon, 1907 p 5 N surroundings of Cairo,
and in the plain of Thebes (after Cambridge)

3. C.s. Denis, 1944 p. 48 N Louxor

Genus **Holocnemus** Simon, 1875

H. pluchii (Scopoli, 1763) R1 335 ♂♀ (17)

Rec: Alexandria, Cairo, Sinai (southern)

Ref: 1. Aranea p. Scopoli, 1763 p. 404 D

2. Aranea rivulata Forskål, 1775 p 86 D Cairo

3. Pholcus rivulatus Audouin, 1825 pp 140-1 pl 3 f 12 D♂
Cairo, inside houses

4. Pholcus rivulatus Cambridge, 1876 p 819 N

Convent gardens and back of Mount Sinai

5. Pholcus rivulatus Koch, 1875 p 25 N

surroundings of Cairo

6. Pholcus rivulatus Cambridge, 1876 pp 566-7 N♂♀ (D♂)

Alexandria and Cairo

7. Pholcus rivulatus Pavesi, 1878 p 372 N Egypt

8. *Holocnemus rivulatus* Simon, 1899 p. 244 N
Bir-Hooker (Wadi Natron)
9. *Holocnemus rivulatus* Strand, 1908c p. 93 N
Bir-Hooker (Wadi-Natron)
10. *Holocnemus pluchei* Denis, 1947b p. 27 No♂ Siwa
- Genus **Micropholcus** Deeleman-Reinhold & Prinsen, 1987
- M. _____ fauroti (Simon, 1887) (T) P 133 ♂♂ (1)
(*Pholcus* f.) R1 340 ♂♂ (1)

Rec:---

- Ref: 1. M.f. Deeleman-Reinhold & Prinsen, 1987 pp. 73-6 f. 1-9
D♂♀ Egypt

Genus **Pholcus** Walckenaer, 1805

- P. _____ phalangoides (Fuesslin, 1775) R1 338-9 ♂♂ (24)

Rec: Alexandria

- Ref: 1. P.p. Audouin, 1825 pp. 141-2 pl. 3 f. 13 D♂♀ Alexandria
2. P.p. Pavesi, 1878 p. 372 N Egypt

Family **Pisauridae**

Genus **Nilus** Cambridge, 1876

- N. _____ curtus Cambridge, 1876 (T) R2a 116 ♂ (2)

Rec: Alexandria

- Ref: 1. N.c. Cambridge, 1876 pp. 596-7 pl. 60 f. 13 Documature ♀
on rushes in a marsh, near Alexandria

Genus **Pisaura** Simon, 1885

- P. _____ mirabilis (Clerck, 1757) (T) R2a 119-120 ♂♂ (46)
Palearctic

Rec:---

- Ref: 1. *Ananea listeri* Scopoli, 1763 p. 397 D

Genus **Rothus** Simon, 1898

- R. _____ atlanticus Simon, 1898 R2a 122 ♀ (2)

Rec: Siwa Oasis

- Ref: 1. R.a. Simon, 1898 p. 14 D♀
2. R.a. Denis, 1947b p. 31 N Siwa

Genus **Thalassius** Simon, 1883

- T. _____ pallidus (L. Koch, 1875) R2a 149 ♀ (5) Egypt

Rec:---

- Ref: 1. *Otenus* p. Koch, 1875 pp. 84-5 pl. 7 f. 7 D♀ (Abysseinae)

Family **Prodidomidae**

Genus **Prodidomus** Hentz, 1847

- P. _____ amaranthinus (Lucas, 1846) R2a 344 ♂♂ (8)
- (*P. diversus*) R2a 344 ♂ (2)
- (*P. letourneuxi*) R2a 344 ♂♂ (1)

Rec: Alexandria, Cairo

- Ref: 1. *Miltia* a. Cambridge, 1872 pp. 218-9 D♂
2. *Miltia diversa* Cambridge, 1872 p. 219 D♂
3. *P. letourneuxi* Simon, 1907 p. 3 N Cairo, Alexandria
4. P.a. Dalmat, 1918 pp. 301-3 f. 1, 6, 8, 18, 22 D♂♀
5. *P. diversus* Dalmat, 1918 pp. 303-4 No♂
6. *P. letourneuxi* Dalmat, 1918 p. 304 f. 9, 10 D♂♀ (immature ♀)
Alexandria and Cairo
7. P.a. Cooke, 1964 pp. 267-9 f. 3, 4, 8, 27 D♂♀

Genus **Zimirina** Dalmat, 1918

- Z. _____ vastitatis Cooke, 1964 B 563 ♀ (1)

Rec: Sollum

- Ref: 1. Z.v. Cooke, 1964 pp. 291-2 f. 21 D♀ under stones on very
arid ground near the shore, Sollum, N.W. Egypt

Family **Salticidae**Genus **Aelurillus** Simon, 1884A. _____ conveniens (Cambridge, 1872) R2b 1113 ♂♀ (4)

Rec: Siwa Oasis

Ref: 1. Salticus c. Cambridge, 1872a pp. 336-7 D♂

2. A.c. Denis, 1947b pp. 74-5 pl. 6 f. 10 D♀ Siwa

A. _____ dorthesii (Audouin, 1825) R2b 1113 ♀ (3)

Rec: Cairo, Wadi Natron

Ref: 1. Attus d. Audouin, 1825 p. 170 pl. 7 f. 9 D♀

2. Aelurops d. Koch, 1875 p. 94 N near Cairo

3. A.d. Simon, 1899 p. 244 N Bir-Hooker (Wadi Natron)

A. _____ mallezi Denis, 1947 R2b 1115 ♀ (1)

Rec: Siwa Oasis

Ref: 1. A.m. Denis, 1947b pp. 75-6 pl. 6 f. 11 D♀ Siwa

A. _____ monardi (Lucas, 1846) R2b 1116 ♂♀ (6)

Rec: Cairo

Ref: 1. Attus m. Cambridge, 1875 p. 611 N near Cairo

A. _____ ogieri (Simon, 1868) R2b 1116 ♂ (4)

Rec: Lower Egypt

Ref: 1. A.o. Simon, 1884 p. 315 N Lower Egypt

Genus **Ballus** C.L. Koch, 1850B. _____ piger Cambridge, 1875 R2b 972 ♀ (1)

Rec: Upper Egypt

Ref: 1. B.p. Cambridge, 1875 pp. 609-610 D♀ Upper Egypt

Genus **Bianor** Peckham, 1886B. _____ albobimaculatus (Lucas, 1846) R2b 1231 ♂♀ (11)

Rec: Alexandria, Cairo, Siwa Oasis, Suez

Ref: 1. B.a. Simon, 1907 p. 9 N Cairo

2. B.a. Denis, 1947b p. 72 N♂♀ Siwa, Ilrhabit Uncorde

[Alexandria, Suez : Simon, 1937]

Genus **Cosmophasis** Simon, 1901C. _____ cincta Denis, 1947 R2b 1150 o♀ (1)

Rec: Siwa Oasis

Ref: 1. C.c. Denis, 1947b pp. 67-8 pl. 4 f. 9 D♀ (immature ♂)

Siwa, Ilrhabit Uncorde

Genus **Eugasmia** Simon, 1902E. _____ occidentalis Denis, 1947 R2b 1045 ♂♀ (1)

Rec: Siwa Oasis

Ref: 1. E.o. Denis, 1947b pp. 82-3 pl. 5 f. 17, pl. 6 f. 14-15 D♂♀

Siwa, Khamissa

Genus **Euophrys** C.L. Koch, 1834E. _____ granulata Denis, 1947 R2b 1174 ♀ (1)

Rec: Siwa Oasis

Ref: 1. E.g. Denis, 1947b p. 70 pl. 5 f. 5 D♀ Siwa

Genus **Festucula** Simon, 1901F. _____ vermiformis Simon, 1901 (T) R2b 1257 ♀ (3)

Rec: Alexandria, Suez

Ref: 1. F.v. Simon, 1901 p. 155 D♀ Alexandria, Suez!

Genus **Hasarius** Simon, 1871H. _____ adansonii (Audouin, 1825) (T) R2b 997-8 ♂♀ (32)

Rec: Alexandria, Cairo, Ras El-Barr

Ref: 1. Attus a. Audouin, 1825 p. 169 pl. 7 f. 8 D♂

2. Attus tardigradus Audouin, 1825 p. 170 pl. 7 f. 13 D♀

3. Salticus a. Cambridge, 1872a p. 324 N

Alexandria, in a bedroom at a hotel

4. Flexippus a. Cambridge, 1876 p. 622 N at Cairo
5. H.a. Favesi, 1878 p. 394 N Egypt
6. H.a. El-Hennawy, 1988 p. 21 N inside houses,
Cairo (Heliopolis), Ras El-Barr

Genus Heliophanus C.L.Koch, 1837

H. _____ cupreus (Walckenaer, 1802) R2b 1156-7 ♂♀ (37)

Rec: ---

- Ref: 1. Attus c. Audouin, 1825 p. 171 pl. 7 f. 15 D♂
 2. H.c. Wesołowska, 1986 pp. 215-6 f. 671-683, 894 D♂♀
H. _____ decoratus L.Koch, 1875 R2b 1164 ♂♀ (4)

Rec: Alexandria, Cairo, Siwa Oasis, Suez, Wadi Natron

- Ref: 1. H.d. Koch, 1875 pp. 87-88 pl. 7 f. 8 D♂ near Cairo
 2. H.d. Cambridge, 1876 p. 624 N among plants on the walls
 of the fortifications near Alexandria
 3. H.d. Simon, 1899 p. 244 N Bir-Hooker (Wadi Natron)
 4. H.d. Caporiacco, 1928 p. 101 N Egypt
 5. H.d. Denis, 1947b p. 68 N Siwa (from tamarisk),
 Aghourmik salt marsh
 6. H.d. Wesołowska, 1986 pp. 208-9 f. 549-557, 559-566,
 570-584, 905 D♂♀ Suez, Siwa near Tamarisk
H. _____ edentulus Simon, 1871 R2b 1158 ♂ (4)

Rec: Alexandria

- Ref: 1. Attus delectus Cambridge, 1876 p. 610 pl. 60 f. 88 N♂♀
 near Alexandria
 2. H.e. Wesołowska, 1986 pp. 17-18 f. 96-104, 896 D♂♀
H. _____ glaucus Bösenberg & Lenz, 1894 R2b 1159 o (1)

Rec: Alexandria, Siwa Oasis

- Ref: 1. H. albescens Denis, 1947b pp. 68-9 pl. 5 f. 1-3, pl. 6 f. 3 D♂♀
 Siwa (from Tamarisk sp.)
 2. H.g. Wesołowska, 1986 p. 208 f. 558, 567-9, 905 D♂♀
 Siwa, Alexandria

Genus Hyctia Simon, 1876

H. _____ staintonii (Cambridge, 1872) R2b 1258 ♂ (2)

Rec: Upper Egypt

- Ref: 1. Attus s. Cambridge, 1876 p. 610 N in Upper Egypt

Genus Hyllus C.L.Koch, 1846

H. _____ plexippoides Simon, 1906 R2b 1054 ♀ (1) Egypt
 F 582 ♀ (1) Egypt

Rec: ---

Genus Icius Simon, 1876

I. _____ fulgens (Cambridge, 1872)
 (Euophrys f.) R2b 1174 ♂♀ (3)

Rec: Alexandria, Cairo, Siwa Oasis, Upper Egypt

- Ref: 1. Salticus f. Cambridge, 1872a pp. 340-1 pl. 14 f. 17 D♂♀
 among plants on walls and rocks at Alexandria, Cairo,
 and in Upper Egypt
 2. Attus f. Cambridge, 1876 p. 611 N on trees and plants
 near Alexandria, Cairo and in Upper Egypt
 3. Evophrys f. Denis, 1947b p. 69 pl. 5 f. 4 N♀ Siwa,
 marsh at Khamissa, Baharein, East Lake shore
 4. I.f. Wesołowska, 1988 pp. 398-400 f. 1, 10-17 D♂♀ Siwa
I. _____ lucipeta (Simon, 1890)
 (Heliophanus l.) R2b 1159 ♂♀ (3)

Rec: Alexandria, Suez

- Ref: 1. Pseudicius l. Wesołowska, 1986 p. 230 N comb n
 2. I.l. Wesołowska, 1988 pp. 395-7 f. 1, 2-9 D♂♀
 Suez, Alexandria

Genus **Langona** Simon, 1901

L. _____ alfensis Hęciak & Prószyński, 1983 P 584 ♂♀ (1)

Rec: Wadi Halfa

Ref: 1. L.a. Hęciak & Prószyński, 1983 pp. 226-7

f. 3, 6, 7, 22, 23, 28, 29 D♂♀ Wadi Halfa

L. _____ mendax (Cambridge, 1876) R2b 1121 ♂ (2)

Rec: Cairo

Ref: 1. Attus m. Cambridge, 1876 pp. 615-6 D♂ near Cairo

L. _____ redii (Audouin, 1825) (T) R2b 1121 ♂♀ (5)

Rec: Alexandria

Ref: 1. Attus r. Audouin, 1825 p. 172 pl. 7 f. 21 D♂

2. Attus effigies or A. interceptor Cambridge, 1876 pp. 616-7
D♂ near Alexandria

3. L.r. Hęciak & Prószyński, 1983 pp. 209-211
f. 1, 2, 4, 5, 12, 25, 37, 38 D♂♀ Egypt

Genus **Menemerus** Simon, 1868

M. _____ animatus Cambridge, 1876 R2b 1266 ♂♀ (5)

Rec: Alexandria, Siwa Oasis, Upper Egypt, Wadi Natron

Ref: 1. M.a. Cambridge, 1876 pp. 622-3 pl. 60 f. 89 D♂♀

on rocks and walls in Upper Egypt

(immature examples near Alexandria)

2. M.a. Simon, 1884 p. 308 N Lower Egypt

3. M.a. Simon, 1899 p. 244 N Bir-Hooker (Wadi Natron)

4. M.a. Denis, 1947b p. 71 pl. 4 f. 16 N♀ Siwa

M. _____ gesneri (Audouin, 1825) R2b 1264 ♀ (2)

Rec: ---

Ref: 1. Attus g. Audouin, 1825 p. 170 pl. 7 f. 12 D♀

M. _____ heydenii Simon, 1868 R2b 1264 ♂♀ (1)

Rec: Cairo, Upper Egypt

Ref: 1. M.h. Cambridge, 1876 p. 622 N upon the trunks of palm
trees near Cairo and in Upper Egypt

M. _____ hunterii (Audouin, 1825) R2b 1265 ♀ (2)

Rec: ---

Ref: 1. Attus h. Audouin, 1825 p. 171 pl. 7 f. 19 D♀

M. _____ illigerii (Audouin, 1825) R2b 1266 ♀ (4)

Rec: ---

Ref: 1. Attus i. Audouin, 1825 p. 172 pl. 7 f. 20 D♀

M. _____ interemptor Cambridge, 1876 R2b 1265 ♀ (1)

Rec: Cairo

Ref: 1. M.i. Cambridge, 1876 pp. 623-4 D♀ near Cairo

M. _____ semilimbatus (Hahn, 1829) (T) R2b 1265 ♂♀ (13)

Rec: Cairo

Ref: 1. M.vigoratus Cambridge, 1876 p. 622 N near Cairo

2. M.s. Pavesi, 1878 p. 391 N Egypt

M. _____ soldanii (Audouin, 1825) R2b 1265 ♂♀ (5)

Rec: Alexandria, Siwa Oasis

Ref: 1. Attus s. Audouin, 1825 p. 171 pl. 7 f. 17, 18 D♂♀

2. Attus s. Cambridge, 1876 p. 611 N near Alexandria

3. M.s. Denis, 1947b pp. 71-2 pl. 6 f. 7, 8 N♂♀
Siwa (on Acacia trees)

Genus **Mithion** Simon, 1884

M. _____ memorabilis (Cambridge, 1876) R2b 1269 ♂♀ (5)

Rec: Alexandria

Ref: 1. Attus m. Cambridge, 1876 pp. 618-620 pl. 60 f. 110 D♂♀
among rushes and herbage in a marsh near Alexandria

Genus **Modunda** Simon, 1901

M. phragmitis Simon, 1901 (T) R2b 1223 ♂♀ (2)

Rec: Suez

Ref: 1. M.p. Simon, 1901 pp. 160-1 D♂♀ Suez!

Genus **Mogrus** Simon, 1882

M. bonnetii (Audouin, 1825) R2b 1122 ♂♀ (4)

Rec: Alexandria, Siwa Oasis, Upper Egypt, Wadi Natron

Ref: 1. Attus b. Audouin, 1825 p. 170 pl. 7 f. 14 D♀

2. Attus b. Cambridge, 1876 pp. 611-2 D♂♀ near Alexandria, also at the roots and among the stems of stunted plants on the desert near Jebel y Silsilis in Upper Egypt

3. M.b. Simon, 1899 p. 244 N Bir-Hooker (Wadi Natron)

4. M.b. Denis, 1947b p. 76 pl. 5 f. 10-12 N♂♀ Siwa (from Tamarix and Acacia trees), Khamissa, El Arig, Baharein, East Lake shore, Girba

M. canescens (C.L. Koch, 1846) R2b 1122 ♂♀ (7) Egypt

Rec:---

Genus **Natta** Karsch, 1879

N. tristellata (Simon, 1906) P 600 ♂ (2) Egypt
(Cyllobelus t.) R2b 1154 ♂ (2) Egypt

Rec:---

Ref: 1. N.t. Prószyński, 1985 p. 83 f. 42-44 D♂ combin.

Genus **Neaetha** Simon, 1884

N. aegyptiaca Denis, 1947 R2b 1123 ♂♀ (1)

Rec: Siwa Oasis

Ref: 1. N.a. Denis, 1947b pp. 78-9 pl. 5 f. 14-16 D♂♀

Siwa, Ilrhahit Uncorde, Sitra, Gara

N. cerussata (Simon, 1868) R2b 1123 ♂ (3)

Rec:---

Ref: 1. Attus c. Pavesi, 1878 p. 395 N Egypt

N. oculata (Cambridge, 1876) R2b 1124 ♂♀ (2)

Rec: Upper Egypt

Ref: 1. Attus o. Cambridge, 1876 pp. 612-4 pl. 60 f. 90 D♂♀

at the roots and among the stems of scattered herbage on the desert near Gebel-y-Silsilis, in Upper Egypt

Genus **Pachypoessa** Simon, 1902

P. plebeja (L. Koch, 1875) P 603 ♂♀ (1)
(Euophrys p.) R2b 1177 ♀ (1)

Rec: Cairo

Ref: 1. Euophrys p. Koch, 1875 pp. 90-2 pl. 7 f. 9 D♀ near Cairo

2. Evophrys p. Caporiacco, 1928 p. 103 N Egypt

Genus **Paraneaetha** Denis, 1947

P. diversa Denis, 1947 (T) R2b 1124 ♀ (1)

Rec: Siwa Oasis

Ref: 1. P.d. Denis, 1947b pp. 77-8 pl. 5 f. 13 D♀ Khamissa

Genus **Pellenes** Simon, 1876

P. frischii (Audouin, 1825) R2b 1125 ♀ (2)

Rec:---

Ref: 1. Attus f. Audouin, 1825 p. 170 pl. 7 f. 11 D♀

Genus **Philaeus** Thorell, 1869

P. chrysops (Poda, 1761) (T) R2b 1064-5 ♂♀ (50)

Rec: Sinai (southern)

Ref: 1. Aranea sloanii & A. catesbaei Scopoli, 1763 p. 401 D

2. Attus sanguinolentus Cambridge, 1870 p. 820 N
Convent gardens and back of Mount Sinai

Genus **Phlegra** Simon, 1876

P. flavipes Denis, 1947 R2b 1139 ♂♀ (1)

Rec: Siwa Oasis

Ref: 1. P.v. Denis, 1947b pp. 72-3 pl. 5 f. 6-8 D♂♀ Siwa
P. memorialis (Cambridge, 1876) R2b 1139 ♂♀ (2)

Rec: Siwa Oasis, Upper Egypt

Ref: 1. Attus m. Cambridge, 1876 pp. 617-8 D♂♀ Upper Egypt
 2. P.m. Denis, 1947b p. 74 pl. 6 f. 9 N♂ Siwa
P. proxima Denis, 1947 R2b 1140 ♀ (1)

Rec: Siwa Oasis

Ref: 1. P.p. Denis, 1947b pp. 73-4 pl. 5 f. 9 D♀ Sitra

Genus **Plexippus** C.L. Koch, 1846

P. paykullii (Audouin, 1825) (T) R2b 1086-7 ♂♀ (36)

Rec: Alexandria, Cairo, Sinai (southern)

Ref: 1. Attus p. Audouin, 1825 p. 172 pl. 7 f. 22 D♂
 2. Salticus vaillantii Cambridge, 1870 p. 820 N
 in an old wall, Wady Ferran, peninsula of Sinai
 3. Attus p. Cambridge, 1876 pp. 610-611 N
 near Cairo and Alexandria, generally on old walls

Genus **Pseudicius** Simon, 1884

P. punctatus Denis, 1947 R2b 1225 ♂♀ (1)

Rec: Siwa Oasis

Ref: 1. P.p. Denis, 1947b pp. 70-71 pl. 6 f. 4-6 D♂♀
 Baharein, East Lake shore
P. spiniger (Cambridge, 1872) R2b 1226 ♂♀ (3)

Rec: Assuan, Cairo, Upper Egypt

Ref: 1. Salticus s. Cambridge, 1872 pp. 339-340 D♂♀
 on the trunks of palm trees in Egypt
 2. Attus s. Cambridge, 1876 p. 610 pl. 60 f. 103 N♂
 on the trunks of palm-trees at various places
 in Egypt, between Cairo and Assuan
 3. P.s. Simon, 1907 p. 9 N Elephantine (on *Acacia nilotica*)
 4. Icius s. Andreeva, et al 1984 p. 372 f. 46-48 N♂♀ Cairo
P. tamaricis Simon, 1885 R2b 1225 ♂♀ (2)

Rec: Wadi Natron

Ref: 1. P.t. Simon, 1899 p. 244 N Bir-Hooker (Wadi Natron)

Genus **Salticus** Latreille, 1804

S. paludivagus Lucas, 1864 R2b 1275 ♀ (3)

Rec: Alexandria

Ref: 1. Epiblemum p. Cambridge, 1876 p. 624 N near Alexandria
S. tricinatus (C.L. Koch, 1846) R2b 1275 ♂♀ (3)

Rec: Alexandria

Ref: 1. Epiblemum t. Cambridge, 1876 p. 624 N near Alexandria

Genus **Stenaelurillus** Simon, 1885

S. werner Simon, 1906 R2b 1143 ♂♀ (1)
 P 629 ♂♀ (1) Egypt

Rec:---

Genus **Synageles** Simon, 1876

S. dalmaticus (Kevserling, 1863) R2b 1040 ♂♀ (9)

Rec: Alexandria, Cairo

Ref: 1. Salticus todillus Cambridge, 1872 p. 324 N Alexandria
 2. Salticus todillus Cambridge, 1876 p. 605 N under stones,
 near Alexandria
 3. S.d. Simon, 1907 p. 9 N Cairo

S. _____ repudiatus (Cambridge, 1876) R2b 1040 ♀ (2)

Rec: Alexandria, Siwa Oasis

Ref: 1. Salticus n. Cambridge, 1876 p. 625 D♀ under a stone,
near Alexandria

2. S.r. Denis, 1947b p. 67 N Baharein, East Lake shore

Genus **Thyene** Simon, 1885

T. _____ imperialis (Rossi, 1846) (T) R2b 1109 ♂ (15)

Rec: Assuan, Cairo, Siwa Oasis, Upper Egypt

Ref: 1. Attus regillus Cambridge, 1876 p. 611 pl. 60 f. 17 N♂
near Cairo and in Upper Egypt, on trees and low shrubs

2. Thya i. Pavesi, 1878 p. 394 N Egypt

3. T.i. Simon, 1907 pp. 9-10 N Philoe island

4. T.i. Denis, 1947b pp. 79-80 N Siwa, Sitra, Khamissa,
Anas Yutra, Koreishid

Genus **Thyenula** Simon, 1902

T. _____ ammonis Denis, 1947 R2b 1112 ♂ (1)

Rec: Siwa Oasis

Ref: 1. T.a. Denis, 1947b p. 81 pl. 6 f. 12-13 D♂ Khamissa

Genus **Yllenus** Simon, 1868

Y. _____ saliens Cambridge, 1876
(Attulus s.) R2b 1242 ♂ (4)

Rec: Alexandria, Cairo, Queinat, Suez, Upper Egypt

Ref: 1. Y.s. Cambridge, 1876 pp. 620-1 pl. 60 f. 92 D♂
among the stems and at the roots of scattered stunted
plants on the desert near Jebel y Silsilis

2. Attulus s. Simon, 1907 p. 10 N Cairo

3. Y.s. Prószyński, 1968 pp. 476-9 f. 161-7 D♂
Alexandria, Suez, Cairo

4. Y.s. Punda, 1975 pp. 36-7 f. 3, 4 N♀ Uadi el-Ghazal
(Auenat)-Libya

Genus **Attus** ? (Salticus ?) R2b nicht zu deuten!

A. _____ druryi Audouin, 1825 R2b 1423 nicht zu deuten!

Rec: ---

Ref: 1. A.d. Audouin, 1825 p. 170 pl. 7 f. 10 D♂

A. _____ mendicus Cambridge, 1876 R2b 1426 nicht zu deuten!

Rec: Alexandria to Assuan

Ref: 1. A.m. Cambridge, 1876 pp. 614-5 D♂ on the bare desert
in several places from Alexandria to Assuan

2. A.m. Prószyński, 1971 p. 380 Lon A.m. (BM(NH))
Oxf. - A.m. (Dept. Zool., Univ. Mus)

A. _____ mouffetii Audouin, 1825 R2b 1427 nicht zu deuten!

Rec: Alexandria

Ref: 1. A.m. Audouin, 1825 p. 171 pl. 7 f. 16 D♀

2. A.m. Cambridge, 1876 p. 610 N near Alexandria

Family **Scytodidae**

Genus **Scytodes** Latreille, 1804

S. _____ berthelotii Lucas, 1838 R1 324 ♀ (2)

Rec: Wadi Natron

Ref: 1. S.b. Simon, 1899 p. 244 N Bir-Hooker (Wadi Natron)

S. _____ immaculata L Koch, 1875 R1 324 ♀ (1)

Rec: Alexandria, Cairo, El-Favum, Upper Egypt, Wadi Halfa

Ref: 1. S.i. Koch, 1875 pp. 27-28 pl. 3 f. 2 D♀ near Cairo

2. S.i. Simon, 1910 p. 305 N Alexandria, Cairo, El-Favum,
Wadi Halfa, common in Upper Egypt

8. obelisci Denis, 1947 B 148 6q (3)

Rec: Luxor

Ref: 1. S. Lessertre Denis, 1944 pp.43-44 pl.1 f.7, pl.2 f.15 D¹
Look for

2. S.o. Denis, 1947a p.103 N (nom. nov)

3. S.G. Denis, 1965 pp. 104-5 pl. 1 f. 2 Dg

S. thoracica Latreille, 1804 (T) R1 324 ♂ (18)

Rec: Cairo, Siwa Oasis

Ref: 1. S.t. Audouin, 1825 pp.152-3 pl.5 f.1 Dg

2. S. t. Cambridge, 1876 p. 564 N (immature ♀) Cairo

3. S.t. Pavesi, 1878 p. 373 N Egypt

4. S.t. Simon, 1910 p. 305 N Egypt.

5. S t. Denis, 1947b p.25 Ng Siwa

S. velutina Heineken & Lowe, 1935 R1 324 ♂ (6)

Rec: Cairo, Siwa Oasis

Ref: 1. S.kochii Cambridge, 1876 pp.564-5 Do(immature ♀)
near Cairo

2. S.v. Simon, 1910 pp. 305-6 N Egypt

3. S.v. Denis, 1947b p. 25 No Siwa

S. _____ v. _____ delicatula Simon, 1873 R1 325 ♂ (3)

Rec: Wadi Natron

Ref: 1. S.d. Simon, 1899 p. 244 N Bir-Hooker (Wadi Natron)

2. S.v.d. Simon, 1910 p.306 N Egypt

Family **Sequestriidae**

Genus **Ariadna** Savigny, 1825

A. insidiatrix Savigny, 1815 (T) R1 304 ♂ (9)

Rec: Alexandria, Cairo

Ref: 1. A.i. Audouin, 1825 pp.109-110 pl 1 f.3 Do Alexandria
↑
inside houses

2. A.1. Cambridge, 1876 p 547 N among debris of an old mud wall, near Cairo

3. *A. spinipes* Simon, 1910 p. 331 N. Eavot.

Genus **Segestria** Latreille, 1804

S. florentina (Rossi, 1790) RI 309 ♂ (17)

Rec: Alexandria, Lower Egypt, Sinai (southern)

Ref: 1. *Superfida* Audouin, 1825 pp 108-9 pl 1 f.2 Dq Alexandria
inside houses

2. *S. perfida* Cambridge, 1870 p. 819 N Wady Gherandel, Sinai

3. S.f. Pavesi, 1878 p.379 N Lower Egypt

4. S.f. Simon, 1910 pp. 331-2 N Alexandria

Family Selenopidae

Genus **Selenops** Latreille, 1819

S. radiatus Latreille, 1819 (T) R2a 731-2 ♂, 190

Rec: Wadi Natron, Nile Valley

Ref: 1. *S. aegyptiaca* Audouin, 1825 op 162-3 pl. 6 f 6 Dp

2 *S. aegyptiacus* Cambridge, 1876 pp. 585-7 pl. 59 f. 10. Ddd
in the Nile boats. Egypt

3 S r. Pavesi, 1878 p. 381 N Egypt.

4 Sir Simon, 1899 p. 244 N Bir-Hooker (Wadi Natron)

Family **Tetragnathidae**Genus **Dyschiriognatha** Simon, 1893D. angrostilba (Cambridge, 1876) R1 994 ♂♀ (2)

Rec: Alexandria

Ref: 1. *Pachygnatha* a. Cambridge, 1876 pp. 573-4 pl. 59 f. 8 ♂♀
on rushes and other plants in a marsh near AlexandriaGenus **Tetragnatha** Latreille, 1804T. filiformis (Savigny, 1825) R1 973 ♀ (3)

Rec: Alexandria, Nile Delta (Lower Egypt)

Ref: 1. *Eugnatha* f. Audouin, 1825 pp. 120-1 pl. 2 f. 4 ♂♀
the Delta's interior
2. T.f. Cambridge, 1876 p. 575 N on rushes in a marsh
near AlexandriaT. flava (Savigny, 1825) R1 974 ♀ (4)

Rec: Alexandria, Rosetta

Ref: 1. *Uloborus* f. Audouin, 1825 pp. 117-8 pl. 2 f. 1 ♂♀
near Rosetta
2. T.f. Cambridge, 1876 p. 574 N on rushes in a marsh
near AlexandriaT. isidis (Simon, 1880) P 314 ♂♀ (1)

(Eucta i.) R1 972 ♂♀ (8)

Rec: Alexandria

Ref: 1. *Eugnatha* i. Simon, 1880c p. 98 ♂♀ Ramlé, near Alexandria
T. nitens (Savigny, 1825) R1 978 ♂♀ (12)Rec: Alexandria, Cairo, Manzalah (lake), Rosetta, Siwa Oasis,
Wadi NatronRef: 1. *Eugnatha* n. Audouin, 1825 pp. 118-9 pl. 2 f. 2 ♂♀
near Rosetta
2. *Eugnatha pelusia* Audouin, 1825 pp. 119-120 pl. 2 f. 3 ♂♀
island of Rosetta; islets of Menzaleh lake
3. *T. molesta* Cambridge, 1872 pp. 295-6 ♂♂
4. *T. molesta* Cambridge, 1876 p. 574 N among rushes in a
marsh near Alexandria
5. T.n. Cambridge, 1876 p. 574 ♀ on rushes in a marsh
near Alexandria
6. *T. pelusia* Cambridge, 1876 p. 575 N near Cairo
7. T.n. Simon, 1880a p. 48 N near Alexandria
8. T.n. Simon, 1899 p. 244 N Bir-Hooker (Wadi Natron)
9. T.n. Simon, 1907 p. 5 N Cairo
10. T.n. Denis, 1947b p. 43 N Siwa, Ilrhabit Unconde, KhamissaFamily **Theridiidae**Genus **Anelosimus** Simon, 1891A. aulicus (C.L. Koch, 1838) P 190 ♂♀ (2)
(*Theridion* a.) R1 461 ♂♀ (13)

Rec: Alexandria, Siwa Oasis, Wadi Natron

Ref: 1. *Theridion rufolineatum* Cambridge, 1876 pp. 569-570 N
on low plants, near Alexandria
2. *Theridion* a. Simon, 1899 p. 244 N Bir-Hooker (Wadi Natron)
3. *Theridion* a. Denis, 1947b p. 42 N Siwa
4. A.a. Levy & Amitai, 1982 pp. 124-7 f. 85-82 ♂♀

Genus **Argyrodes** Simon, 1864

- A. argyrodes (Walckenaer, 1841) P 191 ♂♀ (1)
 (Argyrodina a.) R1 430 ♂♀ (11)
 (A. ammonia) B 393 ♂ (1)

Rec: Siwa Oasis

- Ref: 1. A. ammonia Denis, 1947b pp. 40-41 pl. 2 f. 1-3 D♂
 near Khamissa

Genus **Crustulina** Menge, 1838

- C. conspicua (Cambridge, 1872) R1 398 ♂♀ (3) Egypt

Rec:---

- Ref: 1. Theridion c. Cambridge, 1872 pp. 285-6 pl. 13 f. 11 D♂♀
 beneath stones

Genus **Enoplognatha** Pavesi, 1880

- E. mandibularis (Lucas, 1846) R1 401 ♂♀ (11)

Rec: Alexandria, Cairo

- Ref: 1. Pachygnatha m. Cambridge, 1872 pp. 294-5 N
 under stones, at Cairo
 2. Steatoda m. Cambridge, 1876 pp. 568-9 N
 ♂ running on the rails of the railway near Cairo;
 ♀ under stones near Alexandria

Genus **Euryopsis** Menge, 1868

- E. acuminata (Lucas, 1846)
 (E. episinoides) R1 450 ♂♀ (7)

Rec: Alexandria

- Ref: 1. Theridion scriptum Cambridge, 1872 pp. 283-4 D♂♀ under
 stones and among rubbish and herbage, near Alexandria
 2. E. scripta Cambridge, 1876 p. 563 N near Alexandria
 3. E. quadrimaculata Cambridge, 1876 p. 569 D♂♀ Alexandria
 4. E. a. Cambridge, 1876 p. 569 N near Alexandria
 5. E. a. Simon, 1880a p. 48 N near Alexandria
 6. E. a. Levi & Amitai, 1951 pp. 173-180 f. 1-10 D♂♀
E. albomaculata Denis, 1951 B 406 ♀ (1) Egypt

Rec:---

- E. campestrata Simon, 1907 R1 450 ♀ (1)

Rec: Cairo

- Ref: 1. E. c. Simon, 1907 p. 5 D♀ Cairo
E. quinqueguttata Thorell, 1875 R1 452 ♂♀ (10)

Rec: Siwa Oasis

- Ref: 1. E. q. Denis, 1947b p. 41 N Siwa

Genus **Latrodectus** Walckenaer, 1805

- L. geometricus C. L. Koch, 1841 R1 425 ♂♀ (11)

Rec:---

- Ref: 1. L. g. Levi, 1959 pp. 21-24 f. 8-10, 24-28, 37, 39-50, 80-83
 map 1 D♂♀ Cosmotropical

- L. pallidus Cambridge, 1872 R1 425 ♀ (2)

Rec: Alexandria

- Ref: 1. L. p. Cambridge, 1872 pp. 287-8 D♀ in irregular snares
 spun among low plants and beneath stones, Alexandria
 2. L. p. Levi, 1959 p. 38 f. 22-24, 31, 33-34 map 7 D♂♀ Egypt
L. tredecimguttatus (Rossi, 1790) R1 425-6 ♂♀

Rec: Alexandria, Salahyeh

- Ref: 1. L. erebus Audouin, 1825 p. 137 pl. 3 f. 9 D♀ near Salahyeh
 2. L. argus Audouin, 1825 pp. 137-8 pl. 3 f. 10 D♀
 near Alexandria

3. *L. erebus* Cambridge, 1876 p. 567 N. under stones among the ruins of an old building at Alexandria
4. *L. t. Pavesi*, 1878 p. 372 N. Egypt
5. *L. t. var. erebus* Simon, 1880a p. 47 N. near Alexandria
6. *L. mactans t.* Levi, 1959 pp. 24-38 f. 1, 5-7, 19-21, 53-67, 72-79 maps 2-4 D♂♀

Genus **Nesticodes** Archer, 1950

- N. _____ rufipes* (Lucas, 1846) P 198 ♂♀ (2)
(*Theridion r.*) R1 459-460 ♂♀ (12)

Rec: Cairo

- Ref: 1. *Theridion bajulans* Koch, 1875 pp. 21-23 pl. 2 f. 4.5 D♂♀ near Cairo
2. *Theridion r.* Levy & Amitai, 1982 pp. 86-89 f. 1-5 D♂♀

Genus **Paidiscura** Archer, 1950

- P. _____ dromedaria* (Simon, 1880) P 199 ♂♀ (2)

Rec: Ismailia

- Ref: 1. *Theridion d.* Simon, 1880c p. 99 D♂(q?) Ismailia
2. *Theridion d.* Levy & Amitai, 1982 pp. 110-3 f. 58-64 D♂♀ Ismailia
- P. _____ musiva* (Simon, 1873) P 199 ♂♀ (2)

Rec: Sinai

- Ref: 1. *Theridion m.* Levy & Amitai, 1982 pp. 105-6 f. 43-47 D♂♀ Sinai: Qadesh Barnea

Genus **Steatoda** Sundevall, 1833

- S. _____ ephippiata* (Thorell, 1875) P 201 ♀ (1)
(*Lithyphantes e.*) R1 404 ♀ (1) Egypt

Rec: ---

- S. _____ erigoniformis* (Cambri ge, 1872) P 201 ♂♀ (2)
(*Asadenella e.*) S1 397 ♂♀ (2)
(*Lithyphantes signatus*) R1 405 ♀ (2)

Rec: Alexandria

- Ref: 1. *Theridion e.* Cambridge, 1872 pp. 284-5 D♂♀ among herbage
2. *S. signata* Cambridge, 1876 p. 568 D♀ under a large stone at Alexandria
 3. *S. signata* Simon, 1880a p. 47 N. near Alexandria
- S. _____ paykulliana* (Walckenaer, 1805) P 201 ♂♀ (1)
(*Lithyphantes p.*) R1 404-5 ♂♀ (24)

Rec: Alexandria, Sinai(southern)

- Ref: 1. *Latrodectus hamatus* Cambridge, 1870 p. 819 () convent gardens and back of Mount Sinai
2. *Lithyphantes hamatus* Cambridge, 1876 p. 568 N. under stones, near Alexandria
 3. *Lithyphantes p.* Pavesi, 1878 p. 371 N. Egypt
 4. *S. p.* Simon, 1880a p. 47 N. near Alexandria
- S. _____ triangulosa* (Walckenaer, 1802) P 202 ♂♀ (4)
(*Teutana t.*) R1 415 ♂♀ (18)

Rec: Cairo, Wadi Natron

- Ref: 1. *Theridium t.* Koch, 1875 p. 23 N. near Cairo
2. *S. t.* Pavesi, 1878 p. 371 N. Egypt
 3. *Teutana t.* Strand, 1908a p. 96 N♀ Bir Hooker (Wadi-Natron)
- S. _____ venator* (Savigny, 1825) P 202 ♀ (1)

Rec: Alexandria

- Ref: 1. *Latrodectus v.* Audouin, 1825 p. 138 pl. 3 f. 11 D♀ near Alexandria

Genus **Theridion** Walckenaer, 1805

T. _____ melanostictum Cambridge, 1876 R1 466 ♀ (1)

Rec: Alexandria

Ref: 1. T.m. Cambridge, 1876 pp. 570-1 D♀ on low plants,
near Alexandria
2. T.m. Levy & Amitai, 1982 pp. 99-102 f. 32-37 D♂♀
near Alexandria

T. _____ spinitarse Cambridge, 1876 R1 471 ♀ (1)

Rec: Cairo, Luxor

Ref: 1. T.s. Cambridge, 1876 p. 570 D♀ on a low plant near Cairo
2. T.s. Pavesi, 1883 pp. 33-34 N Egypt
3. T. bifoveolatum Denis, 1944 pp. 48-49 pl. 2 f. 17 D♀ Louxor
T. _____ tuberculatum Kroneberg, 1875 R1 472 ♂♀ (4)

Rec: Alexandria, Ismailia, Siwa Oasis, Suez

Ref: 1. T.t. Denis, 1947b p. 42 N Siwa
[Suez: Simon, 1890; Alexandria, Ismailia: Simon, 1880]
T. _____ varians Hahn, 1831 R1 472-3 ♂♀ (24)

Rec: Alexandria

Ref: 1. T.v. Cambridge, 1876 p. 570 N on low plants,
near Alexandria

Family **Thomisidae**

Genus **Firmicus** Simon, 1895

F. _____ dewitzi Simon, 1899

(Synema multipunctatum d.) R2a 887 ♂ (3)

Rec: Wadi Natron

Ref: 1. F.d. Simon, 1899 pp. 246-7 f. 4 D♂ on Tamarix
Bir-Hooker (Wadi Natron)
2. F.d. Levy, 1985 pp. 33-34 f. 36-39 D♂♀ Egypt

Genus **Heriaeus** Simon, 1875

H. _____ buffoni (Audouin, 1825) R2a 864-5 ♂♀ (5)

Rec: ---

Ref: 1. Thomisus b. Audouin, 1825 p. 164 pl. 6 f. 10 D♂
2. H.b. Levy, 1985 pp. 51-52 f. 67-70 D♂♀ Egypt

Genus **Misumena** Latreille, 1804

M. _____ atrocincta Costa, 1875 B 609 ♂ (1) Egypt

Rec: ---

Genus **Ozyptila** Simon, 1864

O. _____ judaea Levy, 1975 P 522 ♀ (2)

Rec: Sinai

Ref: 1. O.j. Levy, 1985 p. 68 F. 100, 101 D♀ Sinai
O. _____ subclavata (Cambridge, 1876) R2a 880 ♀ (3)

Rec: Alexandria

Ref: 1. Xysticus s. Cambridge, 1876 pp. 584-5 D♀ near Alexandria

Genus **Pistius** Simon, 1875

P. _____ truncatus (Pallas, 1772) (T) R2a 851-2 ♂♀ (33)

Rec: ---

Ref: 1. Thomisus m. Audouin, 1825 pp. 163-4 pl. 6 f. 9 D♂♀

Genus **Runcinia** Simon, 1875

R. _____ lateralis (C.L. Koch, 1838) (T)

(R. cerina) R2a 853 ♂♀ (12)

Rec: Alexandria

Ref: 1. Thomisus l. Cambridge, 1876 p. 580 N among rushes
and other water plants in a marsh near Alexandria
2. Misumena l. Pavesi, 1878 p. 383 N Egypt
3. Thomisus l. Pavesi, 1883 pp. 58-59 N Egypt
4. R.l. Levy, 1985 pp. 45-46 f. 57-60 D♂♀

Genus **Synema** Simon, 1864S. _____ candicans (Cambridge, 1876) R2a 885 ♂ (1)

Rec: Alexandria

Ref: 1. Diaea c. Cambridge, 1876 pp. 580-1 D♂
on low plants near AlexandriaS. _____ diana (Audouin, 1825)

(S. audouini) R2a 886 ♂ (7)

Rec: Cairo to Luxor, Siwa Oasis, Wadi Natron

Ref: 1. Thomisus d. Audouin, 1825 pp. 165-6 pl. 7 f. 1.2 D♂

2. Thomisus d. Cambridge, 1872 p. 306 N on low-growing
plants, Egypt3. Diaea d. Cambridge, 1876 p. 580 N on the branches of the
sont acacia at various places between Cairo and Thebes

4. S. d. Simon, 1899 p. 244 N Bir-Hooker (Wadi Natron)

5. S. d. Denis, 1947b p. 56 N Siwa, Zeitoun, Girba

6. S. d. Levy, 1985 pp. 58-59 f. 82-85 D♂ Egypt

S. _____ globosum (Fabricius, 1775) (T) R2a 885-6 ♂ (25)

Rec: ---

Ref: 1. Thomisus rotundatus Audouin, 1825 p. 166-7 pl. 7 f. 3-5 D♂

2. S. g. Levy, 1985 pp. 55-56 f. 74-77 D♂

S. _____ valentinieri Dahl, 1907 R2a 886 ♀ (1)

Rec: Upper Egypt

Ref: 1. S. v. Dahl, 1907 pp. 383, 390 D♀ Upper Egypt

Genus **Thomisus** Walckenaer, 1805T. _____ bidentatus Kulczynski, 1901 R2a 858 ♂ (2)

Rec: Sinai

Ref: 1. T. b. Levy, 1985 pp. 41-42 f. 51-54 D♂ Sinai

T. _____ hilarulus Simon, 1875 R2a 855 ♂ (3)

Rec: Siwa Oasis

Ref: 1. T. h. Denis, 1947b pp. 54-55 N Siwa, Zegawa
on Acacia treesT. _____ onustus Walckenaer, 1805 (T) R2a 856 ♂ (28)

Rec: Siwa Oasis

Ref: 1. T. peronii Audouin, 1825 p. 163 pl. 6 f. 7.8 D♀

2. T. albus Pavesi, 1878 pp. 382-3 N Egypt

3. T. o. Denis, 1947b pp. 53-54 N Siwa, El Arig

4. T. o. Levy, 1985 pp. 37-38 f. 43-46 D♂

T. _____ spinifer Cambridge, 1872
(T. citrinellus) R2a 857 ♂ (7)

Rec: Assuan, Cairo to Luxor, Sinai?, Siwa Oasis, Wadi Natron

Ref: 1. T. s. Cambridge, 1872 pp. 308-9 pl. 14 f. 14 D♂ Egypt
on low-growing plants and flowers

2. T. s. Cambridge, 1876 p. 580 N

on low-growing plants and flowers, as well as on the
boughs of the sont acacia between Cairo and Thebes

3. T. s. Pavesi, 1883 pp. 57-58 N Egypt

4. T. s. Simon, 1899 p. 244 N Bir-Hooker (Wadi Natron)

5. T. s. Simon, 1907 pp. 6-7 N Assuan

6. T. s. Denis, 1947b p. 55 N Siwa, Zeitoun

7. T. citrinellus Levy, 1985 pp. 39-40 f. 47-50 D♂ Sinai?

Genus **Tmarus** Simon, 1875T. _____ piochardi (Simon, 1866) R2a 816 ♂ (4)

Rec: Siwa Oasis

Ref: 1. T. p. Denis, 1947b p. 53 N Siwa, Khamissa

2. T. p. Levy, 1985 pp. 25-27 f. 24-27 D♂

Genus **Xysticus** C.L.Koch, 1835

X. bliteus (Simon, 1875)

(Oxyptila b.) R2a 876 ♂♀ (2)

(Oxyptila audouini) R2a 875 ♂♀ (5)

Rec: Alexandria, Cairo

Ref: 1. Thomisus hirtus Audouin, 1825 pp.164-5 pl.6 f.11 D♂

2. X.hirtus Cambridge, 1876 p.581 N near Cairo

3. Oxyptila b. Simon, 1880a p.48 N near Alexandria

4. Oxyptila hirta Simon, 1880a p.48 N near Alexandria

5. X.b. Levy, 1985 pp.86-87 f.127-130 D♂♀

X. clerckii (Audouin, 1825) R2a 909 ♀ (2)

Rec:---

Ref: 1. Thomisus c. Audouin, 1825 p.165 pl.6 f.13 D♀

2. X.c. Pavesi, 1883 pp.63-64 N Egypt

X. cristatus (Clerck, 1757) (T) R2a 899-900 ♂♀ (26)

Rec: Alexandria

Ref: 1. X.promiscuus Cambridge, 1876 pp.581-3 D♂♀

on low plants, near Alexandria

2. X.c. Levy, 1985 pp.90-92 f.133-7 D♂♀

X. fesus Cambridge, 1876 R2a 901 ♀ (1)

Rec: Alexandria, Sinai (southern)

Ref: 1. X.f. Cambridge, 1876 pp.583-4 D♀

on a low plant, near Alexandria

2. X.f. Levy, 1985 pp.81-82 f.118-120 D♀

Sinai (Wadi Yah'med, southern Sinai)

X. lalandii (Audouin, 1825) R2a 903 ♂♀ (3)

Rec: Sinai

Ref: 1. Thomisus l. Audouin, 1825 p.165 pl.6 f.12 D♂♀

2. X.l. Levy, 1985 pp.105-7 f.166-9 D♂♀ southwestern Sinai

X. peccans Cambridge, 1876 R2a 906 ♀ (2)

Rec:---

Ref: 1. X.p. Cambridge, 1876 p.584 D immature ♀ on plants, Egypt

X. sabulosus (Hahn, 1831) R2a 906-7 ♂♀ (29) Egypt

Rec:---

Family **Titanoecidae**

Genus **Titanoeca** Thorell, 1869

T. albomaculata (Lucas, 1846) R2b 1372 ♂♀ (13)

Rec: Alexandria

Ref: 1. Amaurobius distinctus Cambridge, 1872 pp.263-4 D♂♀

beneath stones and among debris of various kinds,

at Alexandria

2. T.distincta Cambridge, 1876 p.557 N among the dead stems

and debris of bushes and under stones near Alexandria

3. T.a. Simon, 1880a p.48 N near Alexandria

4. Amaurobius (T.)a. Simon, 1910 p.276 N Egypt

T. tristis L.Koch, 1872 R2b 1373 ♂♀ (10) Egypt

Rec:---

Ref: 1. Amaurobius t. Koch, 1875 pp.31-32 pl.3 f.3 D♀ (Ethiopia)

Family **Uloboridae**

Genus **Uloborus** Latreille, 1806

U. plumipes Lucas, 1846 R2b 1338 ♂♀ (13)

Rec: Cairo to Assiut, Nile Valley and near Red Sea, Siwa Oasis

Ref: 1. U.signatus Cambridge, 1876 pp.579-580 D♂ on a low plant

on the way up the Nile between Cairo and Siout

2. U.p. Simon, 1910 p. 272 N. all Egypt
the Nile Valley and on the Red Sea

3. U.p. Denis, 1947b p. 28 N. Siwa, from houses

U. walckenaerius Latreille, 1806 (T) R2b 1337-8 ♂♀
Rec: Siwa Oasis (19)

Ref: 1. U.w. Denis, 1947b pp. 27-28 N. Siwa, Khamissa

Family Uroctidae

Genus Uroctea Dufour, 1820

U. durandi (Latreille, 1809) R1 385 ♂♀ (18)

Rec: ---

Ref: 1. Clotho d. Audouin, 1825 pp. 134-5 pl. 3 f. 6 D♀ (Mt. Carmel)

2. U.d. Pavesi, 1878 p. 373 N. Egypt

3. U.d. Simon, 1893 Hist. Nat. Ar., I(2): 451 N. (Mediterranean)

U. limbata (C.L. Koch, 1843) R1 385 ♂♀ (2)

Rec: Alexandria

Ref: 1. U.l. Cambridge, 1876 pp. 546-7 N. under stones, Alexandria

2. U.l. Simon, 1882 pp. 241-2 N. common in Egypt

Family Zodariidae

Genus Lachesana Strand, 1932

L. perversa (Savigny, 1825) R1 357 ♂ (4)

Rec: Cairo

Ref: 1. Lachesis p. Audouin, 1825 p. 111 pl. 1 f. 4 D♂ near Cairo

Genus Trygetus Simon, 1882

T. senoculatus (Cambridge, 1872) R1 365 ♀ (2)

Rec: Suez

Ref: 1. Palaestina s. Cambridge, 1872 p. 270 D♀

2. T. senoculatus Simon, 1893 Hist. Nat. Ar., I(2): 438-9 N. Suez

Genus Zodarion Walckenaer, 1847

Z. expers (Cambridge, 1876) R1 367 ♂ (1)

Rec: Alexandria

Ref: 1. Enyo e. Cambridge, 1876 p. 560 D♂ (immature ♀)

Alexandria, under a stone

Z. nitidum (Savigny, 1825) R1 370 ♂♀ (9)

Rec: Alexandria, Cairo

Ref: 1. Enyo n. Audouin, 1825 pp. 135-6 pl. 3 f. 7 D♀

near Alexandria

2. Enyo longipes Audouin, 1825 pp. 136 pl. 3 f. 8 D♂

near Cairo

3. Enyo n. Cambridge, 1876 pp. 559-560 D♀

near Alexandria, under a stone

Z. occitaneum (Dugès, 1836) R1 370 ♂♀ (1)

Rec: --- Alexandria

Z. pileolonotatum Denis, 1935 R1 370 ♂♀ (2)

Rec: Siwa Oasis

Ref: 1. Z.p. Denis, 1935 pp. 102-4 pl. 1 f. 4-6 D♂♀ (Gharabub)

2. Z.p. Denis, 1947b p. 40 N. Siwa, Tarterad

REFERENCES

- Andreeva, E.M., Hęciak, S. & Prószyński, J. 1984
Remarks on *Icius* and *Pseudicius* (Araneae, Salticidae) mainly from Central Asia.
Ann.zool., Warszawa, 37(13):349-376.
- Audouin, V. 1825
Explication sommaire des planches d'Arachnides de l'Égypte et de la Syrie, publiées par Jules-César Savigny.
In: Description de l'Égypte, ou Recueil des observations et des recherches qui ont été faites en Égypte pendant l'expédition de l'armée française. Histoire Naturelle. Tome Premier 1809. Paris 4e partie, p.99-186.
- Ausserer, A. 1871
Beiträge zur Kenntniss der Arachniden-Familie der Territelariae Thorell (Mygalidae Autor.).
Verh.zool.bot.Ges.Wien, 21:117-224, pl.I.
- , 1875
Zweiter Beitrag zur Kenntniss der Arachniden-Familie der Territelariae (Mygalidae Autor.).
Verh.zool.bot.Ges.Wien, 25:125-206, pl.5-7.
- Benoit, P.L.G. 1968
Synopsis des Filistatidae africains (Araneae).
Ann.Mus.civ.St.nat "G. Doria" Genova, 77:92-102.
- Blauwe, R.de 1980a
Revision de la famille des Agelenidae (Araneae) de la region mediterraneenne. (2e partie).
Bull.Inst.r.Sci.nat.Belg., 52(1)Ent.:11-54.
- , 1980b
Revision de la famille des Agelenidae (Araneae) habitant la region mediterraneenne. (3e partie).
Bull.Inst.r.Sci.nat.Belg., 52(1)Ent.:11-28.
- Brignoli, P.M. 1977
Sur quelques Agelenidae et Hanniidae (Araneae) d'Afrique du Nord.
Rev.Arachnol., 1(1):13-21.
- , 1979
On some African *Oecobius* and *Zimiris* (Araneae, Oecobiidae and Gnaphosidae).
Zool.Medec., 54(9):123-6.
- , 1981
Studies on the Pholcidae, I. Notes on the genera *Artema* and *Physocyclus* (Araneae).
Bull.Am.Mus.Nat.Hist., 170(1):90-100.
- , 1982
Contribution à la connaissance des Filistatidae paléarctiques (Araneae).
Rev.Arachnol., 4(1-4):65-75.
- , 1983
A Catalogue of the Araneae described between 1940 and 1981
Ed. P.Merrett. 755pp. Manchester Univ.Press.
- Cambridge, D.F. 1870
Notes on a collection of Arachnida made by J.K. Lord, Esq., in the Peninsula of Sinai and on the African borders of the Red Sea
Proc.Zool.Soc.Lond., 1870, p.818-823, pl.50.

- 1872a
General list of the spiders of Palestine and Syria, with descriptions of numerous new species and characters of two new genera
Proc.Zool.Soc.Lond., 1872, p.212-354, pl.13-16.
- 1872b
Descriptions of twenty-four new species of Erigone.
Proc.Zool.Soc.Lond., 1872, p.747-769, pl.65-66.
- 1876
Catalogue of a collection of spiders made in Egypt, with descriptions of new species and characters of a new genus.
Proc.Zool.Soc.Lond., 1876, p.541-630, pl.58-60.
- Caporiacco, L. di 1928
Risultati Zoologici della Missione inviata dalla R.Società Geografica Italiana per l'esplorazione dell'oasi di Giarabub (1926-1927). Aracnidi di Giarabub e di Porto Bardia.
Ann.Mus.Civ.St.Nat.Genova, 53:77-107.
- Cooke, J.A.L. 1964
A revisionary study of some spiders of the rare family Prodidomidae
Proc.Zool.Soc.Lond., 142(2):257-305.
- Dahl, F. 1907
Synaema marlothi, eine neue Laterigraden-Art und ihre Stellung im System.
Mitt.Zool.Mus.Berlin, 3(3):369-395.
- Dalmas, le Comte de 1918
Synopsis des Araignées de la Famille des Prodidomidae
Ann.Soc.ent.Fr., 87:279-340.
- 1919
Catalogue des Araignées du genre Leptodrassus (Gnaphosidae), d'après les matériaux de la collection E.Simon au Muséum National d'Histoire Naturelle.
Bull.Mus.natn.Hist.nat., 25:243-250.
- 1920
Monographie des Araignées de la section des Pterotricha (Aran. Gnaphosidae).
Ann.Soc.ent.Fr., 89:233-328.
- 1922
Catalogue des Araignées récoltées par le Marquis G.Doria dans l'île Giglio (Archipel toscan).
Ann.Mus.Civ.St.Nat.Giacomo Doria (Genova), 50(Serie 3, vol. x):79-96.
- Deeleman-Reinhold, C.L. & Prinsen, J.D. 1987
Micropholcus fauroti (Simon) n.comb., a pantropical, synanthropic spider (Araneae : Pholcidae).
Ent.Ber., Amst., 47(5):73-77.
- Denis, J. 1935
Sur deux araignées de Cyrénaïque
Ann.Mus.Civ.St.Nat.Giacomo Doria (Genova), 57:100-104, pl.1.
- 1936
On a collection of spiders from Algeria.
Proc.Zool.Soc.Lond., 1936:1027-1060, 5pls.
- 1944
Descriptions d'Araignées Nord-Africaines.
Bull.Soc.Hist.nat.Toulouse, 79(1):41-57, 2pls.
- 1947a
Deux rectifications synonymiques concernant les araignées
Bull.Soc.Hist.nat.Toulouse, 82:103-4

- , 1947b
Results of the Armstrong college expedition to Siwa oasis (Libyan desert), 1935.
Bull.Soc.Fouad 1er Entom.,31:17-103, 6pls.
- , 1948
A new fact about Erigone vagans Aud. and Sav.
Proc.Zool.Soc.Lond.,1948:588-590.
- , 1965
Les Araignées du Fezzan.
Bull.Soc.Hist.nat.Afr.N.,55:103-144.
- El-Hennawy, H.K. 1987a
Preliminary notes on the biology, distribution, and predatory behaviour of Pseudopompilus humboldti (Dhlb.) (Hymenoptera : Pompilidae).
SERKET,1(1):1-11.
- , 1987b
A list of Egyptian spider genera.
SERKET,1(1):12-14.
- , 1987c
New records of Stegodyphus dufouri (Audouin) 1825 (Araneida : Eresidae) from Egypt.
SERKET,1(1):19.
- , 1988
Hasarius adansonii (Audouin, 1825) (Araneida: Salticidae) in Egypt.
SERKET,1(3):21.
- Fage, L. 1929
Mission Saharienne Augiéras-Draper, 1927-1928. Araignées Nouvelles
Bull.Mus.natn.Hist.nat., Paris, 2e, 1(4):246-254.
- Forskål, P. 1775
Descriptiones Animalium, Avium, Amphibiorum, Piscium, Insectorum, Vermium; quae in itinere orientali. Ed. Carsten Niebuhr
Hauniae, 1775. 164pp. (Copenhagen)
- Grasshoff, M. 1970a
Die Tribus Mangorini. I. Die Gattungen Eustala, Larinia s.str., Larinopa n.gen. (Arachnida: Araneae: Araneidae-Araneinae).
Senckenberg.biol., 51(3/4):209-234.
- , 1970b
Die Tribus Mangorini. II. Die neuen Gattungen Siwa, Paralarinia, Faradja, Mahemba und Lariniaria (Arachnida: Araneae: Araneidae-Araneinae).
Senckenberg.biol., 51(5/6):409-423.
- , 1971
Die Tribus Mangorini. III. Die Gattung Drexelia MacCook (Arachnida: Araneae: Araneidae-Araneinae).
Senckenberg.biol., 52(1/2):81-95.
- Hassan, A. I. 1950
The Theraphosidae in Egypt, with a description of Chaetopelma shabati spec.nov. (Araneae).
Bull.Soc.Fouad 1er Entom., 34:159-171.
- , 1953
The Decobiidae of Egypt.
Bull.zool.Soc.Egypt, 11:14-30.
- Hęciak, S. & Prószyński, J. 1983
Remarks on Langona Simon (Araneae, Salticidae).
Ann.zool., Warszawa, 37(4):207-233.

- Koch, L. 1867
Zur Arachniden- und Myriapoden-Fauna Süd-Europa's.
Verh. zool. bot. Ges. Wien, 17: 857-900.
- , 1875
Aegyptische und Abyssinische Arachniden, gesammelt von Herrn
C. Jickeli. Nürnberg 1875. 96pp., 7pls.
- Kritscher, E. 1960
Zur Kenntnis des Genus *Cerbalus* Simon 1897 (Aran., Eusparassidae).
Anz. öst. Akad. Wiss. Math.-Naturwiss. Kl., 97: 271-279.
- , 1966
Die paläarktischen Arten der Gattung *Oecobius* (Aran., Oecobiidae).
Ann. Naturhist. Mus. Wien, 69: 285-295, 2pls.
- Levi, H.W. 1959
The spider genus *Latrodectus* (Araneae, Theridiidae).
Trans. Amer. Micros. Soc., 78(1): 7-43.
- Levy, G. 1977
The Philodromid spiders of Israel (Araneae, Philodromidae).
Isr. J. Zool., 26: 193-229.
- , 1985
Fauna Palaestina. Arachnida II. Araneae: Thomisidae.
Jerusalem. 115pp., 1pl.
- , 1986
Spiders of the genera *Siwa*, *Larinia*, *Lipocrea* and *Drexelia*
(Araneae: Araneidae) from Israel.
Bull. Br. arachnol. Soc., 7(1): 1-10.
- , & Amitai, P. 1981
Spiders of the genera *Euryopsis* and *Dipoena* (Araneae: Theridiidae)
from Israel.
Bull. Br. arachnol. Soc., 5(4): 177-188.
- , & -----, 1982
The comb-footed spider genera *Theridion*, *Achaeearanea* and
Anelosimus of Israel (Araneae: Theridiidae).
J. Zool., Lond., 196: 81-131.
- Linnaeus, C. 1758
Systema Naturae. Tomus I. Regnum Animale.
Holmiae 1758. 10th edition. 824pp. (Stockholm)
- Millidge, A.F. 1988
Genus *Prinerigone*, gen. nov. (Araneae: Linyphiidae).
Bull. Br. arachnol. Soc., 7(7): 216.
- Pavesi, P. 1878
Aracnidi aggiunto un catalogo sistematico delle specie di Grecia
Ann. Mus. Civ. St. Nat. Genova, 11: 335-396.
- , 1883
Spedizione Italiana nell'Africa Equatoriale - Risultati Zoologici.
Aracnidi del Regno di Scioa
Ann. Mus. Civ. St. Nat. Genova, 20: 5-105.
- Platnick, N.I. 1981
A review of the spider subfamily *Palpimaninae* (Araneae,
Palpimanidae), I.
Bull. Br. arachnol. Soc., 5(4): 169-173.
- , 1989
Advances in Spider Taxonomy 1981-1987
Ed. P. Merrett. 673pp. Manchester Univ. Press.

- Platnick, N. I. & Murphy, J. A. 1984
A revision of the spider genera *Trachyzelotes* and *Urozelotes* (Araneae, Gnaphosidae).
Am. Mus. Novitates, 2792: 1-30.
- Prószyński, J. 1968
Systematic revision of genus *Yllenus* Simon, 1868 (Araneida, Salticidae).
Ann. zool., Warszawa, 26(19): 409-494.
- , 1971
Catalogue of Salticidae (Aranei) specimens kept in major collections of the world.
Ann. zool., Warszawa, 28(17): 367-519.
- , 1985
On *Siler*, *Silerella*, *Cyllobelus* and *Natta* (Araneae, Salticidae).
Ann. zool., Warszawa, 39(2): 69-85.
- Punda, H. 1975
Remarks on the genus *Yllenus* Simon, 1868 (Aranei: Salticidae).
Ann. Zool., 33(3): 35-44.
- Raven, R. J. 1985
The spider Infraorder Mygalomorphae (Araneae): Cladistics and systematics.
Bull. Amer. Mus. Nat. Hist., 182(1): 1-180.
- Roewer, C. F. 1942
Katalog der Araneae von 1758 bis 1940.
1. Band 1040pp. Bremen.
- , 1954
Katalog der Araneae von 1758 bis 1940, bzw. 1954
2. Band Abt. a pp: 1-924, Abt. b pp: 925-1751 Bruxelles.
- Scopoli, I. A. 1763
Entomologia Carniolica exhibens Insecta Carnioliae Indigena et Distributa in Ordines, Genera, Species, Varietates. Methodo Linnaeana. Vindobonae 1763. (Vienna)
(Aranea: No. 1077-1120, pp. 392-404)
- Simon, E. 1880a
Liste d'Arachnides recueillis aux environs immédiats d'Alexandrie (Égypte) par M. A. Letourneux.
Ann. Soc. ent. Fr., (5) 10. Bull. pp. 47-48
- , 1880b
Description d'un nouveau genre d'Arachnides de la famille des Dictynidae.
Ann. Soc. ent. Fr., (5) 10. Bull. pp. 54-55
- , 1880c
Descriptions de trois nouvelles espèces d'Arachnides d'Égypte, reçues de M. A. Letourneux.
Ann. Soc. ent. Fr., (5) 10. Bull. pp. 98-99.
- , 1882
Viaggio ad Assab nel Mar Rosso, dei signori G. Doria ed O. Beccari con il R. Avviso "Esploratore" dal 16 Novembre 1879 al 26 Febbraio 1880.
II. Étude sur les Arachnides de l'Yemen Méridional.
Ann. Mus. Civ. St. Nat. Genova, 18: 207-260, pl. 8.
- , 1884
Études Arachnologiques, 16e Mémoire, XXIII Matériaux pour servir à la faune des Arachnides de la Grèce.
Ann. Soc. ent. Fr., 6(4): 305-356.

- 1889
Arachnide transcaspicae ab ill. Dr. G. Radde, Dr. A. Walter et
A. Conchin inventae (annis 1886-1887).
Verh. zool. bot. Ges. Wien, 39:373-386.
- 1892-1903
Histoire Naturelle des Araignées. 2ème ed. Paris.
Tome I(1-4) 1892-5: 1084pp., Tome II(5-8) 1897-1903: 1080pp.
- 1893
Études Arachnologiques, 25e Mémoire, XL Descriptions d'espèces
et de genres nouveaux de l'ordre des Araneae.
Ann. Soc. ent. Fr., 62:299-330, pl. 7.
- 1898
Descriptions d'Arachnides Nouveaux des familles des Agelenidae,
Pisauridae, Lycosidae et Oxyopidae.
Ann. Soc. ent. Belg., 42:5-34.
- 1899
Arachnides recueillis par M. C.-J. Dewitz en 1898, à Bir-Hooker
(Wadi Natron), en Égypte.
Bull. Soc. ent. Fr., 1899, pp. 244-247.
- 1901
Descriptions d'Arachnides nouveaux de la famille des Attidae
(Suite)(1).
Ann. Soc. ent. Belg., 45:141-161.
- 1907
Arachnides recueillis en Égypte et le long du Nil Blanc
par la Mission zoologique suédoise, 1901. Arachnida.
In: Results of the Swedish Zoological Expedition
to Egypt and the White Nile. 21:1-10.
- 1910
Catalogue raisonné des Arachnides du Nord de l'Afrique
(1re partie).
Ann. Soc. ent. Fr., 79:265-332.
- Smith, A. M. 1988
The Tarantula, classification and identification guide
Fitzgerald Publishing, London. 179pp.
- Strand, E. 1906
Diagnosen nordafrikanischer, hauptsächlich von Carlo Freiherr
von Erlanger gesammelter Spinnen.
Zool. Anz., 30(19-22):605-690.
- 1908a
Diagnosen nordafrikanischer, hauptsächlich von Carlo Freiherr von
Erlanger gesammelter Aviculariidae, Drassidae und Theridiidae
Jahresh. Ver. Nat. Württlg., 64:11-101.
- 1908b
Diagnosen nordafrikanischer, hauptsächlich von Carlo Freiherr
von Erlanger gesammelter Clubioniden.
Archiv Math. Natur., 29(2):3-70.
- 1908c
Nordafrikanische Spinnen, hauptsächlich von Carlo Freiherr von
Erlanger gesammelt (Dictynidae, Eresidae, Sicariidae, Dysderidae,
Caponiidae, Palpimanidae, Zodariidae, Urocteidae, Pholcidae,
Agelenidae, Pisauridae).
Archiv Naturg., 74, I(1):67-128, pl. 2: f. 1a-8a

Wesołowska, W. 1986

A revision of the genus *Heliophanus* C.L.Koch, 1833

(Aranei : Salticidae).

Ann.zool., Warszawa, 40(1):1-254.

-----, 1988

Redescriptions of three species of the genus *Icius* Simon, 1876

(Aranei : Salticidae).

Ann.zool., Warszawa, 41(11):395-402.

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PREFACE

SERKET : the reason and the aim

In 1982, I had presented my first paper to be published in the Proceeding of Egypt's National Conference of Entomology. The proceeding appeared after about three years (1985). My paper appeared in a very bad condition; randomly abridged, with many misprints, even in the title, and with black and black photographs ! It was my first paper, i.e. my first dear child. That's the reason? - maybe !

The problem of scientific publication in Egypt and the documentation and distribution of the published scientific works all over the world is another reason.

Arachnology is one of the ignored fields of study in Egypt. It needs help, like my first paper. Therefore, it was necessary to convert copper to gold, or the idea to a fact : a "SERKET".

The aim is clear and evident : The study of arachnids of Egypt, North Africa, and the Middle East. Serket is the first step.

The present issue is the first one in volume two (1990-1991). The second volume begins with a good number of subscribers. The financial situation is better now. The contributions of other authors began to come to Serket. It will be not a journal of one author! Also, exchange with other periodicals has been extended now.

The last word in this preface is the most important one. It's the acknowledgment paragraph! My grateful thanks are to all of my friends who helped and encouraged me to continue my work. My special thanks are to Drs.: A.H.Ali (Egypt), J.C.Cokendolpher (USA), M.Filmer (South Africa), J.Gruber (Austria), R.R.Jackson (New Zealand), J.P.Kim (South Korea), R.Kinzelbach (Germany), J.Kochalka (Paraguay), J.-C.Ledoux (France), A.Smith (U.K.), T.Tantawi (Egypt), M.Townley (USA), T.Yaginuma (Japan).

The most grateful thanks are to Mr. John Parker who published the first news about Serket in the newsletter of the B.A.S. His encouragement and his advices are unforgettable.

My family, specially my father, helped me much and much. I can not find suitable words to thank them as I like.

The Editor

Hisham El-Hennawi

Arachnida in the diet of
Acanthodactylus scutellatus (Audouin, 1825)

(Reptilia : Lacertidae)

Hisham K. El-Hennawy
41, El-Manteqa El-Rabia St., Heliopolis, Cairo.

Introduction

This brief article constitutes a small part of a larger study dealing with the feeding behaviour of the grey-spotted lizard Acanthodactylus scutellatus. The species which was described for the first time from Egypt by Victor Audouin as *Lacerta scutellata* or *Lézard Gris Pommelé* (Audouin, 1825; p.172, pl.1 fig.7) is a widely distributed Saharan endemic (Lambert, 1984). In Egypt, it inhabits sparsely vegetated sandy desert areas (Saber, 1989).

The specimens used in this study were collected by Dr. Samy A. Saber (Department of Zoology, Faculty of Science, Al-Azhar University, Cairo) during his research for the Ph.D. degree on reptiles.

In this study fragments of insects, arachnids, etc., found within the lizards' stomachs were examined and identified at least to order rank.

Materials and Methods

The lizard specimens were collected from the arid vicinity of a newly constructed town of El-Āasher-Min-Ramadan in the eastern desert of Egypt, about 65 km east of Cairo (almost 31° 50' E, 30° 19' N). The specimens were collected monthly from May 1986 to April 1987 (except February 1987) and February 1988.

The stomach contents (removed by Dr. Saber) of 97 lizards were examined under a stereo-microscope. All the animal contents were identified at least to the order rank. Arachnids were separated for more detailed identification.

Results

Among the stomach contents of A. scutellatus, I could find insects from 15 different orders, which are:

Coleoptera	Isoptera
Collembola	Lepidoptera (only larvae)
Dermaptera	Neuroptera (Myrmeleontid larvae)
Dictyoptera (F. Mantidae)	Orthoptera
Diptera	Thysanoptera
Hemiptera	Thysanura
Homoptera	Trichoptera
Hymenoptera (mainly F. Formicidae, with other families)	

Also, I found only one Isopod (Crustacea), a part of a worm ? , and Arachnids of four orders: Araneida, Pseudoscorpionida, Solpugida, and Acarida, which are the subject of this article.

Beside these animals, I also found small flowers and fleshy plant leaves in 40.21% of the examined stomachs and sand crystals in 55.67% of them.

Arachnida

Arachnids of four orders were found in 41 stomach contents i.e. 42.27% of the examined stomachs. The percentage ratio of number of stomachs containing arachnids to total number of examined stomachs per month is listed in table 1.

Table 1.

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Spt	Oct	Nov	Dec
Total number of Stomachs examined	9	10	10	7	5	13	3	10	10	7	6	7
Number of Stomachs containing Arachnids	4	3	3	3	2	8	0	3	4	5	1	5
%	44	30	30	43	40	62	00	30	40	71	17	71

Numbers of stomachs containing different orders of arachnids and their ratios to number of all stomachs containing arachnids and to number of all examined stomachs are listed in table 2.

Table 2.

	No. Stomachs examined	% : No. Stomachs containing Arachnids	% : No. all Stomachs examined
Araneida	38	92.68	39.18
Salticidae	18	43.90	18.56
Pseudoscorpionida	8	19.51	8.25
Solpugida	1	2.44	1.03
Acarida	4	7.32	3.09
Ticks	1	2.44	1.03
Mites	4	9.76	4.12

The percentage ratio of every arachnid order to total number of examined stomachs per month is listed in table 3.

Table 3.

Month	% Arachnida	Ar.	Ps.	Sol.	Ac. :	Ticks	Mites
Jan	44.44	44.44	11.11	11.11	11.11	---	11.11
Feb	30.00	30.00	---	---	10.00	---	10.00
Mar	30.00	30.00	---	---	---	---	---
Apr	42.86	42.86	14.29	---	---	---	---
May	40.00	40.00	---	---	---	---	---
Jun	61.54	61.54	---	---	---	---	---
Jul	---	---	---	---	---	---	---
Aug	30.00	30.00	10.00	---	---	---	---
Sep	40.00	30.00	10.00	---	10.00	10.00	10.00
Oct	71.43	42.86	28.57	---	---	---	---
Nov	16.67	16.67	16.67	---	---	---	---
Dec	71.43	71.43	14.29	---	---	---	---

The numbers of the arachnids, in every specimen, are listed in table 4.

Order **Araneida** : This order is represented by 57 specimens of 12 families. These families are listed below, accompanied by the number of the individuals found.

Family	Filistatidae	1	Salticidae	21
	Gnaphosidae	6	Theridiidae	2
	Linyphiidae	11	Thomisidae	1
	Lycosidae	7	Titanoecidae	1
	Oecobiidae	1	Urocteidae	1
	Philodromidae	2	Zodariidae	1
	Unidentified	2		

Salticidae is the predominant spider family among the other families represented by individuals in the examined stomach contents. It represents 36.84% of the total number of spider individuals found. It is ingested nearly throughout the year.

Order **Pseudoscorpionida** : Fragments of 12 specimens of family Olpiidae were found in Jan(1), Apr(2), Aug(2), Spt(2), Oct(2), Nov(1), Dec(2). These may belong to the same species. The largest specimen is 1.85 mm long (No. A-01-27).

Order **Solpugida** : Only one juvenile solpugid of family Daesiidae was found in a specimen collected in January, 1987.

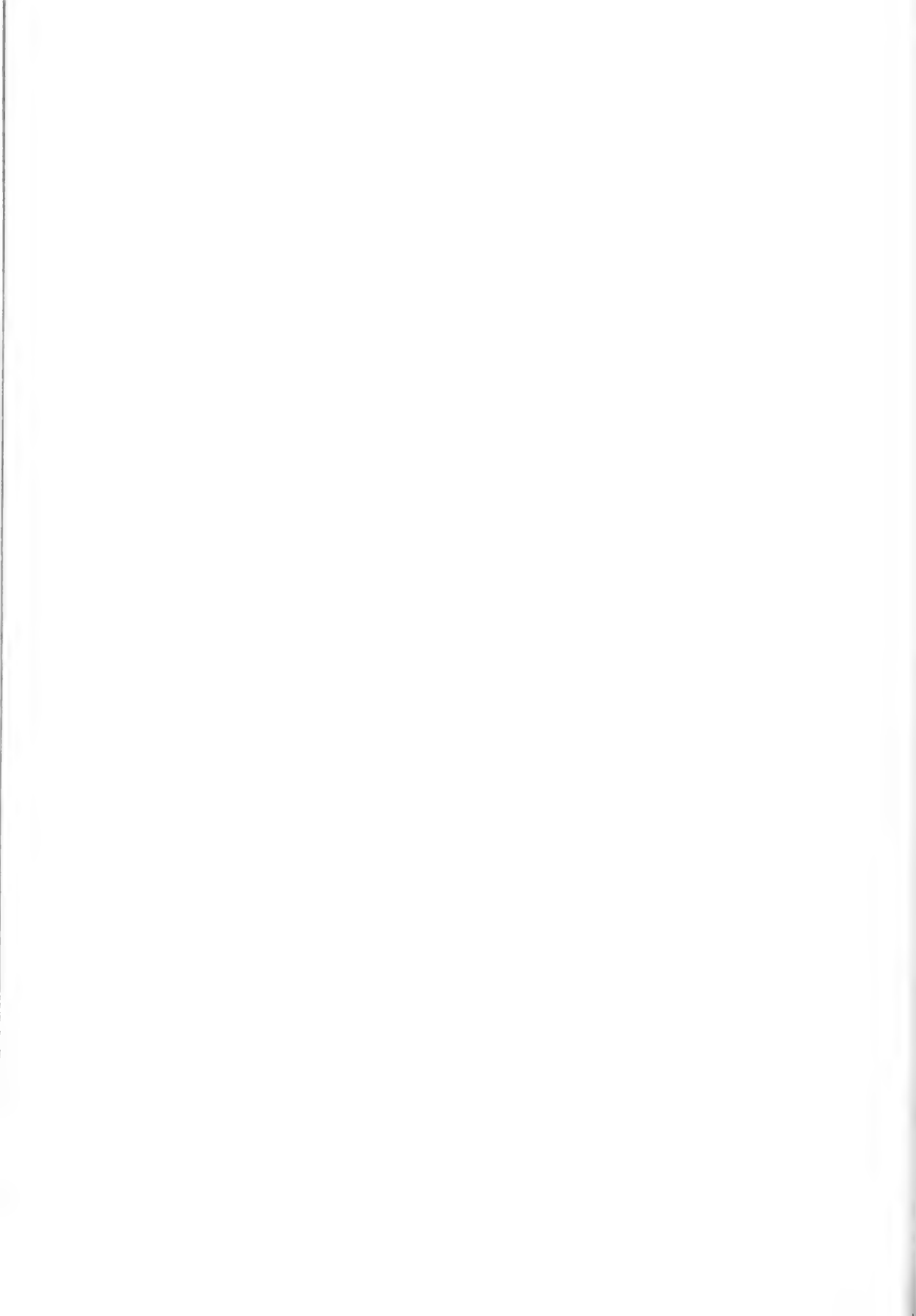
Order **Acarida** : a) Ticks : Only two small Ixodid ticks were found in a specimen collected in September, 1986.

b) Mites : Six tiny mites were found in 4 specimens collected in January 1987, February 1988, and September 1986. The range of their total length is 0.24-0.79 mm.

Table 4. Number of Arachnid specimens found in the stomach contents of Acanthodactylus scutellatus

Month	Number of Specimen	Sol.	Ps.	Ac. T./M.	Ar. Salt./Others	
Jan (1987)	A-01-29 30 31 32	1 - - -	- - - 1	- - - -	1q 1♂ - 1sd	1♂ Oecobius 1juv. Linyphiidae 1sq Philodromidae -
Feb (1988)	39 40 41	- - -	- - -	- - 3	1♂ - 1juv.	2 [1 Lycosid, 1 Gnaphosid] 1juv. Gnaphosidae? 1 Linyphiidae
Mar (1987)	33 34 35	- - -	- - -	- - -	- - 3	1q Thomisidae 1♂ <u>Erigone dentipalpis</u> - [2♂♂, 1q]
Apr (1987)	36 37 38	- - -	2 - -	- - -	1♂ 1♂ 1juv.	- - 1♂ Lycosidae
May (1986)	01 02	- -	- -	- -	- 2♂♂	3 [1♂ Linyphiidae?, 2♂♂ <u>Erigone dentipalpis</u>] 3 [1♂, 1sd, 1juv. Linyphiidae?]
Jun (1986)	03 04 05 06 07 08 09 10	- - - - - - -	- - - - - -	- - - - - -	- - - - - 1♂ - 1juv.	1♂ Zodariidae? 1 Lycosidae? 1juv. Gnaphosidae? 1juv. Gnaphosidae? 2juv. [1 Gnaphosid, 1??] 1 ?? 1♂ Philodromidae -
Jul (1986)	--	-	-	-	-	-
Aug (1986)	11 12 13	- - -	2 - -	- - -	- 1 -	1juv. Gnaphosidae? - 1juv. Linyphiidae?
Spt (1986)	14 15 16 17	- - - -	- - 2 -	- - 2 -	- - - -	2juv. [Theridiid, Urocteid] - 1juv. Filistatidae 1 Lycosidae
Oct (1986)	18 19 20 21 22	- - - - -	1 - - 1 -	- - - -	- 1juv. 1 -	- - - - 1juv. Lycosidae
Nov (1986)	23	-	1	-	-	1sd
Dec (1986)	24 25 26 27 28	- - - - -	- - - 2 -	- - - - -	1juv. - - 1juv. -	1q Titanoeca 1q Lycosidae 1juv. Theridiidae? - 2juv. [Lycosid, Linyphiid?]

[Number of Specimen: in the author's collection. Sol.: Solpugida.
 Ps.: Pseudoscorpionida. Ac.: Acarida. T.: Ticks. M.: Mites.
 Ar.: Araneida. Salt.: Salticidae. Others: Other families of spiders.]



Discussion

Araneida

Spiders are frequently recorded as an important prey item of lizards of different genera in different countries (see table 5). Spiders were found too, among prey items of Crocodilus niloticus [O. Crocodilia] in Uganda and Northern Rhodesia (Zimbabwe) (Corbet, 1960; Cott, 1961). Cott (1961) stated that "The habits of young crocodiles when feeding on land are similar to those of an insectivorous lizard."

Table 5.

Records of Spiders as a prey item of lizards (& crocodiles)

Order Squamata

Suborder Sauria

Family Agamidae

Agama

A. agama Chapman & Chapman, 1964 [Ghana]: Ar. in 8.33% stomachs.

A. bibroni Capel-Williams & Pratten, 1978 [Morocco]: Ar. 3% of diet.

Chamaeleonidae Chamaeleo

C. pumilus Burrage, 1973 [South Africa]: Ar. 0.3-9.0% of diet.

Cordylidae

Pseudocordylus

P. s. subviridis Broadly, 1964 [South Africa]: Ar. in 13.63% stomachs.

P. langi -----, 1964 [-----]: Ar. in 16.66% stomachs.

Iguanidae

Sceloporus

S. undulatus hyacinthinus McGovern & Knisley, 1986 [USA].

Lacertidae

Lacerta

L. agilis, L. muralis, L. viridis Rollinat, 1934 [France].

L. agilis Krasavtzev, 1936 [USSR]: Ar. 37.72 of diet.

L. vivipara Avery, 1966 [UK]: 10.07-47.44% (mean: 25.61%) of no. of invertebrates found in stomachs.

Teiidae

Cnemidophorus

C. sexlineatus Paulissen, 1987 [USA]: Ar. 15.3-24.9% of diet.

[3 families: Ctenidae, Lycosidae, & Salticidae]

[Salticidae: 2.6-7.2% of diet; 17-29% of spiders]

Order Crocodilia

Family Crocodylidae

Crocodilus

<u>C. niloticus</u>	Length	<1m	1-2m	>2m
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Corbet, 1960 [Uganda]: Ar. in	13.79%	4.55%	---
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[2 families: Lycosidae (Trochosa) & Pisauridae (Dolomedes)]

Cott, 1961 [Uganda & N. Rhodesia]:	14.58	1.90	---
------------------------------------	-------	------	-----

[2 families: Tetragnathidae (Tetragnatha) &

Pisauridae (Dolomedes & Thalassius)]

The ratio of spiders among other prey items found within the stomach contents of different species of lizards, listed above, ranges between 0.3 - 47.44%. Spiders constitute a little proportion in the stomach contents of Chamaeleo and Agama species and a reasonable proportion in Pseudocordylus, Cnemidophorus and Lacerta species. The same ratio is found in the stomach contents of Crocodilus niloticus less than 1 m long.



Acanthodactylus scutellatus ingests spiders in a proportion similar to that of Lacerta species. Salticids constitute 36.84% of the spiders ingested. A smaller ratio (17-29%) had been recorded before from Cnemidophorus sexlineatus by Paulissen (1987). The sudden jumping movement of salticid spiders which attract lizards may explain their high proportion among other spiders ingested. Lycosidae and Gnaphosidae are represented too, but in a lower proportion. They are too fast-moving spiders to be caught often in the field (Avery, 1966; Edgar, 1969).

The presence of spiders of 12 different families within the stomach contents of A. scutellatus reflects the great diversity of spiders in the region of El-Āashr-Min-Ramadan City. This may also indicate that the lizards take whatever they find in the proportions in which it is available (Avery, 1966). A good collection of arachnids from that region is required to make comparison. Also, the amount of lizard samples collected is not enough to observe seasonal variation in arachnid preys.

Pseudoscorpionida

Although pseudoscorpions were found within the stomach contents of some Anurans (Amphibia) (Chamberlin, 1925; Pengilliey, 1971), lizards were not observed before as predators on pseudoscorpions.

Weygoldt (1969) did not mention lizards particularly, but he stated that (p.118) "all animals searching for small arthropods in leaf litter or under tree bark,...., may eat pseudoscorpions occasionally." In addition, Jones (1975) talked about harvestmen, spiders, ants and birds as British pseudoscorpions' predators, but nothing about reptiles.

Phoresy, or firmly holding on an insect's leg may be an explanation of finding pseudoscorpions in lizards' stomach contents, rather than occasional predation.

Solpugida

Solpugids are not widely known among prey items of lizards. Burrage (1973) recorded solpugids among the stomach contents of Chamaeleo namaquensis collected during April 1969 in South West Africa (a coastal population). He found them constitute only a trace of 0.6% of the food contents. The fast solpugid movement and their scarcity may be the reasons of their very small ratio among other prey items of lizards, rather than being preferred or not.

Acarida

Mites are ingested by the lizards occasionally with plant leaves and flowers. On the contrary, ticks are picked up when they move in front of lizards. Ticks were recorded before among the prey items of Siberian lizards (Strelkov, 1962).

Scorpionida

Although there are two species of scorpions found in the vicinity of El-Aasher-Min-Ramadan City (Androctonus amoreuxi and Buthacus leptochelys), no scorpions were found in the stomach contents of A. scutellatus.

Scorpions were recorded before as a prey item of Chamaeleo namaquensis from South West Africa (Burrage, 1973) and only once for the Singapore anuran Rhacophorus leucomystax (Berry, 1965).



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References

- Audouin, V. 1825
Explication sommaire des planches de Reptiles (Supplément),
publiées par Jules-César Savigny. pp.161-184, 5 pls.
In: Description de l'Égypte, ou Recueil des observations et des
recherches qui ont été faites en Égypte pendant l'expédition de
l'armée française. Histoire Naturelle. Tome Premier 1809. Paris.
- Avery, R.A. 1966
Food and feeding habits of the Common lizard (Lacerta vivipara)
in the west of England.
J.Zool., Lond., 149(2): 115-121.
- Berry, P.Y. 1965
The diet of some Singapore Anura (Amphibia).
Proc.zool.Soc.Lond., 144(2): 163-174.
- Broadley, D.G. 1964
A review of the crag lizards (Genus Pseudocordylus) of Natal.
Ann Natal Mus., 16: 99-110.
- Burrage, B.R. 1973
Comparative ecology and behaviour of Chamaeleo pumilus pumilus
(Gmelin) and C.namaquensis A.Smith (Sauria: Chamaeleonidae)
Ann.S.Afr.Mus., 61: 1-158, 14 figs, 49 tables.
- Capel-Williams, G. & Pratten, D. 1978
The diet of adult and juvenile Agama bibroni (Reptilia: Lacertae)
and a study of the jaw mechanisms in the two age groups.
J.Zool., Lond., 185: 309-318.
- Chamberlin, J.C. 1925
On a collection of Pseudoscorpions from the stomach contents
of toads.
Univ.Calif.Publ.Ent., 3: 327-332. [Not seen.]
- Chapman, B.M. & Chapman, R.F. 1964
Observations on the biology of the lizard Agama agama in Ghana.
Proc.zool.Soc.Lond., 143(1): 121-132.
- Corbet, P.S. 1960
The food of a sample of Crocodiles (Crocodilus niloticus L.)
from Lake Victoria.
Proc.zool.Soc.Lond., 133: 561-572.
- Cott, H.B. 1961
Scientific results of an inquiry into the ecology and economic
status of the Nile Crocodile (Crocodilus niloticus) in Uganda
and Northern Rhodesia.
Trans.zool.Soc.Lond., 29(4): 211-356, 9 pls., 45 figs.



- Edgar, W.D. 1969
Prey and predators of the Wolf spider Lycosa lugubris.
J.Zool., Lond., 159: 405-411.
- Jones, P.E. 1975
Notes on the predators and prey of British pseudoscorpions.
Bull.Br.arachnol.Soc., 3(4): 104-105.
- Krasavtzev, B.A. 1936
(Biological observations on Lacerta agilis agilis.)
Vop.Ekol.Biotsen., 3: 275-281. [In Russian, with English summary]
[Not seen. After Avery, 1966]
- Lambert, M.R.K. 1984
Amphibians and reptiles. In: Cloudsley-Thompson, J.L.(Ed.),
Sahara Desert. pp.205-227. Oxford: Pergamon Press. 384pp.
- McGovern, G.M. & Knisley, C.B. 1986
Prey selection experiments and predator-prey size relationships
in eastern fence lizards, Sceloporus undulatus hyacinthinus from
Virginia.
VA.J.Sci., 37(1): 9-15.[Not seen. Ecol.Abstr.13(10)1987: 9877-D131.]
- Paulissen, M.A. 1987
Optimal foraging and intraspecific diet differences in the lizard
Cnemidophorus sexlineatus
Oecologia, 71(3): 439-446.
- Pengilliey, R.K. 1971
The food of some Australian anurans (Amphibia).
J.Zool., Lond., 163(1): 93-103.
- Rollinat, R. 1934
La vie des reptiles de la France centrale.
Paris. Delagrave. [Not seen. After Avery, 1966]
- Saber, S.A. 1989
Ecological studies on reptiles from the eastern desert.
Unpublished Ph.D.Thesis, Faculty of Science, Al-Azhar University.
- Strelkov, E.I. 1962
(Contributions to the ecology of amphibians and reptiles of western
Siberian coniferous forests.)
Vop.Okhr.Prirod.Zapad.Sibiri Novosibirsk, 3: 69-82.
[Not seen. After Avery, 1966]
- Weygoldt, P. 1969
The biology of Pseudoscorpions.
Harvard University Press, Cambridge, Massachusetts.
pp. xiv + 145, 114 figs.



Harvestmen of Egypt

(Arachnida : Opiliones)

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Introduction

Harvestmen are generally thought of as animals requiring moist woodlands. In reality, they exist in almost all terrestrial habitats from arctic tundra to subantarctic islands. Although the greatest numbers of species and individuals are found in wet tropical countries, numerous species are found in the hot arid regions of the world. Harvestmen in arid zones are seldom collected as they are nocturnal and generally hide under rocks or ground debris where some moisture can be found. Because of their scarcity, few descriptions or records have been published. Many undescribed species from deserts await description. Likewise, descriptions of both sexes and natural history data are generally unavailable.

Harvestmen were apparently unknown to the ancient Egyptians. The first record being that of Savigny (1816). Little information has been obtained since that time. Egyptian arachnologists have an opportunity to study a fauna which is virtually unknown. Nothing is recorded on the ecology or biology of Egyptian harvestmen, except that some specimens were collected under stones or rocks. My studies in North American deserts reveal that success in collecting is greatly increased if the correct habitat is searched during the proper weather and season.

An apparently empty desert will often reveal harvestmen during and shortly after a rain. Searching plants (even during the day for short-term rains) that collect water is best shortly after these rains, but only if larger mobile species of harvestmen are present as adults. Many juveniles as well as some harvestmen families (including the Egyptian Trogulidae) remain in litter or cracks in the ground.

Collecting throughout the year will probably reveal short seasons in which harvestmen are active in the desert. Moist environments may be occupied by harvestmen year-round. Long-term pitfall or pan trap studies should reveal nice material. Baiting with fruit

jams or jellies as well as searching with lights at night might reveal other interesting specimens. Looking under rocks and searching through litter and other ground debris often result in collections. If litter is abundant, a berlease funnel is useful. Edges of rivers and lakes should not be overlooked as well as gardens and parks within cities. Several tramp species of harvestmen are recorded from nearby countries and they might be found in port cities of Egypt.

The stage of development of harvestmen should be verified before the animals are preserved. Juveniles of most species can not be identified. Maintaining the harvestmen in terrariums will often result in some juveniles molting to adulthood. In this manner valuable life history data can be obtained while obtaining a specimen that can be identified. The terrarium should contain covering objects and moisture (preferably a dish of water with a sponge). Most species will feed on dead soft-bodied insects, moist cereals, and fruits.

To aid future researchers, I have prepared a taxonomical key and annotated species list. These guides are to be used with caution as the female of one Metaphalangium species is undescribed and new species await discovery.

Taxonomical Key to the known Egyptian Opiliones

- 1a. Body very hard, resembling a flattened mite (11-15 mm long); legs short and stout; ocular tubercle extending forward over the chelicerae and pedipalps

Family **Trogulidae**

Trogulus gypseus

- 1b. Body soft, rounded (4-12 mm long); legs long (femur II longer than body); ocular tubercle short and rounded

Family **Phalangiidae**

2

- 2a. The abdominal dorsum with a slender, white stripe
(see Martens, 1978: fig. 416)

Metaphalangium

3

- 2b. Dorsal, abdominal, light-colored stripe lacking

Phalangium savignyi

- 3a. Penis truncus widened at ends and glans long and thin
(see Staręga, 1984: figs. 66, 68)

Metaphalangium cirtanum

- 3b. Penis truncus distally only slightly wider than mid-shaft and glans short and thick
(see Staręga, 1973: figs. 22, 23)

Metaphalangium orientale

Fauna

Family Trogulidae

Trogulus gypseus Simon, 1879

Egyptian record: Cairo (Roewer, 1923).

Records outside of Egypt: Palestine, Syria, Israel, south and southwestern Turkey, Karpathos, Saria, Kos, and Crete (Martens, 1965; Starega, 1973).

Comments: Being the only member of the Trogulidae known from Egypt, this species is easily recognized. Martens (1965: fig.1) illustrated the penis and Roewer (1923) illustrated the tarsus of the 2nd and 4th legs. Trogulus species have been recorded in other localities from under rocks, ground debris, and leaf humus.

Family Phalangidae

Metaphalangium

Two species are currently referred to this genus from Egypt. The species are best separated by differences in the male genitalia (see key). Because the female of Metaphalangium orientale remains undescribed, comparative characters are unknown. Accurate identifications will require comparisons to the descriptions by Starega (1973: 138-140; 1984: 38-42) and Martens (1978: 237-239 as Metaphalangium propinquum).

As noted below under Phalangium aegyptiacum and Phalangium copticum, these species are unrecognizable and may prove to be Zacheus hebraicus or a similar species. Because of the abdominal color pattern of Zacheus, these species would be identified as Metaphalangium in the key to Egyptian harvestmen. Illustrations of the genitalia of Z. hebraicus from Israel are provided by Starega (1966).

Metaphalangium orientale Starega, 1973

Egyptian record: Masara, ca. 50 km NW Asyut (Starega, 1973).

Records outside of Egypt: Israel (as M. propinquum, Starega, 1966; 1973).

Comments: The original description of this species is illustrated by drawings of the male pedipalp and penis (Starega, 1973: figs. 21-23). Adults of this species were collected under rocks during January.



Metaphalangium cirtanum (C.L.Koch, 1839)

Egyptian record: only recorded to country (Staręga, 1984).

Records outside of Egypt: Algeria, Tunisia, Spain, Corsica, Italy, Sardinia, Sicily, Jugoslaviya, Albania, Greece (Levkas, Zante, Crete, and Rhodes), Turkey, Syria, Lebanon, and Israel (Staręga, 1984).

Comments: This species has been recorded from much of its range as Phalangium propinquum. Staręga (1984) synonymized this name under M. cirtanum. Staręga (1984: figs.64-68) illustrated the male chelicera, pedipalp, and penis. Similar illustrations, as well as those of the seminal receptacles, ocular tubercle, and dorsum of body are provided by Martens (1978: figs.416-421).

Phalangium

There is only a single recognizable species of this genus recorded for certain from Egypt. Two other species were described from the previous century that are not recognizable. They were from either Egypt or Palestine (Old Syria). Identification of Egyptian Phalangium should be verified by comparisons to drawings of the genitalia.

Phalangium aegyptiacum Savigny, 1816

It is uncertain whether this species was collected in Egypt or Palestine (Old Syria). The diagnosis is unrecognizable, the species is a nomen dubia (name of uncertain identification). Roewer (1923) suggested it might be an Egaenus or Zacheus sp. Staręga (1984) stated this species might be identical to Zacheus hebraicus (Simon), a species recorded from Israel and Jordan (Staręga, 1966).

Phalangium copticum Savigny, 1816

Like the preceding species, the collection locality of this species is uncertain, either Egypt or Palestine (Old Syria). Likewise, it is a nomen dubia. Roewer (1923) stated this species was probably the same as Metaphalangium propinquum (= M. cirtanum), whereas Staręga (1984) suggested it was a Zacheus sp.

Phalangium savignyi Audouin, 1825

Egyptian record: Wadi Hof, 4-8 km NE Helwan (Staręga, 1973).

Records outside of Egypt: southern Turkey (Roewer, 1923), Palestine (Bodenheimer, 1937), Syria (Roewer, 1956), southern Italy, Jordan, Israel, Lebanon, and Crimean Oblast, U.S.S.R. (Staręga, 1984)

Comments: The penis and seminal receptacles are illustrated by Staręga (1973: figs.1-3). Roewer (1923: fig.928) provided a whole-body drawing which shows the enormous male chelicerae. There is considerable variation in the length of the second segment of the male chelicera and this character alone should not be used for identification. This species has been collected in Egypt under rocks in November (juveniles) and January (adults).



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References

- Audouin, V. 1825
Explication sommaire des planches d'Arachnides de l'Égypte et de la Syrie, Publiées par Jules-César Savigny, Membre de l'Institut; offrant un exposé des caractères naturelles des genres avec la distinction des espèces. In: Description de l'Égypte ou Recueil des observations et des recherches qui ont été faites en Égypte pendant l'expédition de l'armée française. Paris. Histoire Naturelle. Tome Premier 1809. 4e partie, pp. 99-186. Atlas: pls. 1-9 (Arachnides).
- Bodenheimer, F.S. 1937
Prodromus Faunae Palestinae. Essai sur les éléments zoogeographiques et historiques du sud-ouest du sous-regne Palearctique. Mém. Inst. Egypt., 33: 1-286.
- Koch, C.L. 1839
Übersicht des Arachnidensystems. 2. Heft. Nürnberg. 38 pp.
- Martens, J. 1965
Über südägäische Weberknechte der Inseln Karpathos, Rhodos und Kos (Arachnoidea, Opiliones). Senckenberg. biol., 46(1): 61-79.
- 1978
Spinnentiere, Arachnida. Weberknechte, Opiliones. Die Tierwelt Deutschlands. Teil 64. 464 pp.
- Roewer, C.F. 1923
Die Weberknechte der Erde. Systematische Bearbeitung der bisher bekannten Opiliones. Gustav Fischer, Jena. vi + 1116 pp.
- 1956
Über Phalangiinae (Phalangiidae, Opiliones Palpatores). Senckenberg. biol., 37(3/4): 247-318.
- Savigny, J.C. 1816
Mémoires sur les animaux sans vertèbres. Première partie. Description et classification des animaux invertébrés et articulés, connus sous les noms Crustacés, d'Insectes, d'Annelides, etc. Paris. vii + 118 pp., 8 pls.
- Simon, E. 1879
Descriptions d'Opiliones nouveaux. Ann. Soc. ent. Belg., Bruxelles, 22: LXX-LXXV.
- Staręga, W. 1966
Einige Weberknecht-arten (Opiliones) aus Israel. Israel J. Zool., 15: 57-63.
- 1973
Beitrag zur Kenntnis der Weberknechte (Opiliones) des Nahen Ostens. Ann. Zool., Warszawa, 30(6): 129-153.
- 1984
Revision der Phalangiidae (Opiliones), III. Die afrikanischen Gattungen der Phalangiinae, nebst Katalog aller afrikanischen Arten der Familie. Ann. Zool., Warszawa, 38(1): 1-79.



Key to Scorpion Families

(Arachnida : Scorpionida)

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Introduction

This key is prepared to help the student of arachnology to identify his scorpion samples to family rank. It is based mainly upon the synopses of Francke (1982) and the phylogenetic reappraisal of Lamoral (1980). Trichobothriotaxy is included according to Vachon (1973). Separation of Ischnuridae from Scorpionidae is after Lourenço (1989). Dates of names of families and names of type genera are due to Francke (1985). At the end of the key, another simplified key is included to help in quick field identification. The most differentiating characters are underlined and others are bold typed to facilitate comparisons.

Acknowledgments

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List of Families

The families are arranged here within four superfamilies in a system concurs the phylogenetic relationships among the nine known extant families of scorpions. The type genus, number of known genera, approximate number of species, and distribution of each family are also included in this list.

Order Scorpionida

Superfamily Buthoidea

Family Buthidae Simon, 1879

Type Genus: Buthus Leach, 1815

[50 genera, about 600 species]

Distribution: Worldwide

Superfamily Chaeriloidea

Family Chaerilidae Pocock, 1893

Type Genus: Chaerilus Simon, 1877

[1 genus, about 15 species]

Distribution: Oriental

Superfamily Scorpionoidea

Family Scorpionidae Peters, 1862

Type Genus: Scorpio Linnaeus, 1758

[7 genera, about 175 species (Scorpionidae+Ischnuridae)]

Distribution: Ethiopian, Palearctic, Oriental, Australian

Family Ischnuridae Simon, 1879

Type Genus: Liocheles Sundevall, 1833

[8 genera]

Distribution: Ethiopian, Oriental, Neotropic, Australian

Family Diplocentridae Pocock, 1893

Type Genus: Diplocentrus Peters, 1862

[7 genera, about 50 species]

Distribution: Neotropic, Nearctic, Palearctic

Superfamily Vaejovoidea

Family Vaejovidae Thorell, 1876

Type Genus: Vaejovis Koch, 1836

[11 genera, about 130 species]

Distribution: Nearctic, Oriental

Family Iuridae Thorell, 1876

Type Genus: Iurus Thorell, 1876

[5 genera, about 20 species]

Distribution: Neotropic, Nearctic, Palearctic

Family Bothriuridae Simon, 1880

Type Genus: Bothriurus Peters, 1862

[12 genera, about 80 species]

Distribution: Neotropic, Australian

Family Chactidae Pocock, 1893

Type Genus: Chactas Gervais, 1844

[19 genera, about 80 species]

Distribution: Neotropic, Nearctic, Palearctic



Key to Scorpion Families

1. Prosoma : Sternum : subtriangular

Cheliceral movable finger : distal dorsal tooth : longer than its ventral counterpart ; the ventral edge is smooth

Legs : tibial spurs : present

: pedal spurs : retrolateral and prolateral

Trichobothriotaxy : Pedipalpal Femur : 11 [4 internal (rarely 5)]
(Type A) (exceptionally 9, 10, 12, 14)

Tibia : 13 [none ventral]

Hand : 8 (exceptionally 7)

Fixed Finger : 7

Male reproductive system : Paraxial organs : prolonged into a flagellum, with 6 glands (1 cylindrical + 1 oval + 4 anterior accessory glands)

Spermatophore : flagelliform (rod-like)

: pars reflecta : present

Female reproductive system : an ovariuterus without diverticula; and 5 pairs of symmetrical transverse anastomoses forming a reticular mesh of : 8 polygons

Family BUTHIDAE

- Prosoma : Sternum : subpentagonal

Cheliceral movable finger : distal dorsal tooth : shorter than its ventral counterpart ; the ventral edge is smooth or serrate

Legs : tibial spurs : absent

: pedal spurs : retrolateral and/or prolateral

Trichobothriotaxy : Pedipalpal Femur : 3-9 [1 internal]

Tibia : >13 [1-3 ventral]

Hand : 6 ; 16 or more

Fixed Finger : >7

Male reproductive system : Paraxial organs : truncated, with 2 anterior accessory glands (or no glands)

Spermatophore : lamelliform (or fusiform)

: pars reflecta : absent

Female reproductive system : an ovariuterus with or without diverticula; and 5 pairs of symmetrical transverse anastomoses forming a reticular mesh of : 6 polygons

...2

2. Maxillary lobes (Gnathobases) : expanded into broad lobes anteriorly

Trichobothriotaxy : Pedipalpal Femur : 9 [4 dorsal, 4 external]

(Type B)

Tibia : 14

Hand : 6

Fixed Finger : 8 [2 dorsal]

Male reproductive system : with 2 anterior accessory glands

Lamelliform spermatophore : has a single basal flexure;
without eversible capsule

Family CHAERILIDAE



2. Maxillary lobes (Gnathobases) : unexpanded
Trichobothriotaxy : Pedipalpal Femur : 3 [1 dorsal, 1 external]
 (Type C) (exceptionally 4)
 Tibia : >18
 Hand : >15
 Fixed Finger : >9 [4 dorsal]
 Male reproductive system : **without** accessory glands
 ... 3
3. Legs : Pedal spurs : only prolateral
Basitarsal spurs : 1
 Median row of spicules/short setae on ventral surface
 of telotarsus : **absent**
 Chelicerae : Movable finger : Subdistal external teeth : 1
 Female genital operculum plates : **fused**
 Female reproductive system : **with** numerous lateral diverticula
 ... 4
4. Legs : Pedal spurs : prolateral + retrolateral
Basitarsal spurs : 2
 Median row of spicules/short setae on ventral surface
 of telotarsus : **present**
 Chelicerae : Movable finger : Subdistal external teeth : 2
 (except in Bothriurus & Iurus)
 Female genital operculum plates : **unfused**
 Female reproductive system : **without** lateral diverticula
 ... 6
4. Telson : with a small rounded tubercle (subaculear tooth)
under the stinger
 Tarsi : armed ventrally **with** two longitudinal rows of spines used
 for digging
 Trichobothriotaxy : Pedipalpal Tibia 19
 Chela 26
 Handback : Orthobothriotoxic
 Venom colour : **reddish**
 "Hook" on distal lamina inner margin of hemispermaphore : **absent**
 Family DIPLOCENTRIDAE
5. Telson : without tubercle
 Tarsi : **without** longitudinal rows of spines
 Trichobothriotaxy : Pedipalpal Tibia 19 or more
 Chela 26 or more
 Handback : **(+) Neobothriotoxic** (except
 Pandinus & some species of Opisthophthalmus)
 Venom colour : **opalescent**
 "Hook" on distal lamina inner margin of hemispermaphore : **present**
 ... 5

5. Tarsi : with rounded latero-apical lobes
Poison glands : complex, lobed or semi-lobed
Family SCORPIONIDAE
- Tarsi : without rounded latero-apical lobes
Poison glands : simple, smooth or pre-lobed (exceptionally semi-lobed)
Family ISCHNURIDAE
6. Prosomal sternum : of 2 small plates (narrow transverse sclerites)
Trichobothriotaxy : Pedipalpal Tibia : predominantly
Orthobothriotaxic Family BOTHRIURIDAE
- Prosomal sternum : of 1 pentagonal plate
Trichobothriotaxy : Pedipalpal Tibia : predominantly
(+)Neobothriotaxic ...7
7. Stigmata outline : round
Cheliceral fixed finger : Subdistal and median teeth : U-spaced
Cheliceral movable finger : Inner and outer distal teeth :
forming a fork
A supraneural lymphatic gland extends : throughout the length of
the mesosoma (1)
Male reproductive system : Lamelliform spermatophore : has both
a basal and a median flexures & lacks an eversible capsule
Family CHACTIDAE
- Stigmata outline : slit-like to suboval
Cheliceral fixed finger : Subdistal and median teeth : V-spaced
Cheliceral movable finger : Inner and outer distal teeth :
aligned longitudinally (except in Iurus)
...8
8. A supraneural lymphatic gland extends : through the anterior one-
half to two-thirds of the mesosoma ($1/2 - 2/3$)
Male reproductive system : Lamelliform spermatophore : has both
a basal and a median flexures & an eversible
capsule hinged to the median flexure
Family VAEJOVIDAE
- A supraneural lymphatic gland extends : the length of the mesosoma
Male reproductive system : Lamelliform spermatophore : has a single
basal flexure & lacks an eversible capsule
Cheliceral movable finger : ventral edge armed with one large tooth
Trichobothriotaxy : Pedipalpal Hand >15
Fixed Finger : 10-12
Family IURIDAE

Simplified Key to Scorpion Families

1. Prosoma : Sternum : subtriangular Family BUTHIDAE
 -. Prosoma : Sternum : subpentagonal ...2
2. Maxillary lobes : expanded into broad lobes anteriorly
 Pedipalpal Femur : with 9 trichobothria Family CHAERILIDAE
 -. Maxillary lobes : unexpanded
 Pedipalpal Femur : with 3 trichobothria ...3
3. Legs : Pedal spurs : only prolateral
 Basitarsal spurs : 1 ...4
 -. Legs : Pedal spurs : prolateral + retrolateral
 Basitarsal spurs : 2 ...6
4. Telson : with a small rounded tubercle under the stinger
 Family DIPLOCENTRIDAE
 -. Telson : without tubercle ...5
5. Tarsi : with rounded latero-apical lobes Family SCORPIONIDAE
 -. Tarsi : without rounded latero-apical lobes Family ISCHNURIDAE
6. Prosomal sternum : of 2 small plates Family BOTHRIURIDAE
 -. Prosomal sternum : of 1 pentagonal plate ...7
7. Stigmata outline : round Family CHACTIDAE
 -. Stigmata outline : slit-like Family VAEJOVIDAE & Family IURIDAE

References

- Francke, O.F. 1982
 Scorpiones. In: S.P.Parker ed., Synopsis and classification of living organisms. 2: 73-75. McGraw-Hill Book Co., New York.
- , 1985
 Conspectus Genericus Scorpionorum 1758-1982 (Arachnida: Scorpiones)
 Occas.Pap.Mus., Texas Tech Univ., No.98, 32pp.
- Lamoral, B.H. 1980
 A reappraisal of suprageneric classification of recent scorpions and of their zoogeography.
 Proc.8th intern.Congr.Arachnol., Vienna 1980, pp.439-444.
- Lourenço, W.R. 1989
 Rétablissement de la famille des Ischnuridae, distincte des Scorpionidae Pocock, 1893, à partir de la sous-famille des Ischnurinae Pocock, 1893.
 Revue Arachnologique, 8(10): 159-177.
- Vachon, M. 1973
 Etude des caractères utilisés pour classer les familles et les genres de scorpions (Arachnides). 1. La trichobothriotaxie en arachnologie. Sigles trichobothriaux et types de trichobothriotaxie chez les scorpions.
 Bull.Mus.natl.Hist.nat., Paris, 3e série, no 140, Zool 104: 857-958.

Key to Solpugid Families

(Arachnida : Solpugida)

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Introduction

This key is prepared to help the student of arachnology to identify his solpugid samples to family rank. It is based mainly upon the synopses of Muma (1982) except in two aspects : 1) The synonymy of Amacataidae Muma, 1971 = Daesiidae Roewer, 1934 [Proposed by Maury, 1980] & 2) The elevation of Mummuciidae to be a separate family (previously known as a subfamily of Ammotrechidae) [Maury, 1984].

Number of known genera, approximate number of species, and distribution of each family are included in this diagnostic key. All the numbers of genera and species are according to Muma (1982) except Daesiidae, Ammotrechidae and Mummuciidae.

At the end of the key, another simplified key is included to help in quick field identification. The most differentiating characters are bold typed to facilitate comparisons.

Acknowledgment

I thank Dr. Emilio Maury who approved the manuscript of the key. His notes and his cooperation are greatly appreciated. I thank him too for help in obtaining literature necessary to this work.

Key to Solpugid Families

1. Anus : ventrally located Family RHAGODIDAE
Heavy-bodied; short-legged; small to large (10-60 mm)
Tarsal segmentation : 1-1-1-1
Leg 1 : tarsi : with a pretarsus + 2 claws
 metatarsi : with a dense ventral clothing of short
 spinelike setae
Male cheliceral flagellum : paraxially immovable; composed of
 2 flattened, curled, setae that form a nearly complete,
 slightly curved, truncate, hornlike tube on the mesial
 surface
Female genital opercula : not differentiated from other
 abdominal sternites and not specifically variable
Distribution : northeastern Africa, southwestern Asia,
 and Near East
[26 genera, 91 species]
- . Anus : terminally located ...2
2. Tarsal segmentation : 1-4-4-(6-7) Family SOLPUGIDAE
Long-legged; small to large (8-60 mm)
Leg 1 : tarsi : without claws
Male cheliceral flagellum : paraxially immovable; mesodorsal
 to dorsal, whiplike structure separated from the fixed
 cheliceral finger by a suture
Female genital opercula : indistinctly differentiated from
 other abdominal sternites, and although they are some-
 times variable from one genus to another, they are not
 specifically so
Distribution : predominantly in Africa
[23 genera, >200 species]
- . Tarsal segmentation : 1-1-1-1 to 1-2-2-4 ...3
3. Tarsal segmentation : 1-2-2-(2-4) ...4
- . Tarsal segmentation : 1-1-1-(1-4) ...8
4. Tarsal claws of legs 2 to 4 : setaceous Family GALEODIDAE
Long-legged; small to large (12-70 mm)
Tarsal segmentation : 1-2-2-3
Leg 1 : tarsi : without claws or with 1 or 2 claws
(cont.)



Male cheliceral flagellum : paraxially movable; a single, capitate (terminally enlarged) seta located on the mesial surface

Female genital opercula : not differentiated from other abdominal sternites and not specifically variable

Distribution : northern Africa, and Asia

[4 genera, 180 species]

Galeodopsis 3 spp.

Paragaleodes 6 spp.

Othoes 26 spp.

Galeodes 145 spp.: 3 subgenera : Galeodenna 2 spp.

Galeodellus 52 spp.

Galeodes 91 spp.

-. Tarsal claws of legs 2 to 4 : smooth

...5

5. Leg 1 : tarsi : with a pretarsus + 2 claws Family CEROMIDAE

Long-legged; small to moderate-sized (8-18 mm)

Tarsal segmentation : 1-2-2-2

Male cheliceral flagellum : paraxially movable; membranous to whiplike, located on the mesial surface and usually associated with one or more enlarged setae (Toreus lacks a typical flagellum)

Female genital opercula : differentiated from other abdominal sternites and are specifically variable

Distribution : only southern Africa

[3 genera, 19 species]

Toreus 1 sp.

Ceromella 3 spp.

Ceroma 15 spp.

-. Leg 1 : tarsi : without claws

Female genital opercula : not differentiated from other abdominal sternites and not specifically variable

Tarsal segmentation : 1-1-1-1 to 1-2-2-4

...6

6. Male cheliceral flagellum : paraxially movable, ovate to irregular membranous structure attached to the mesial surface by a disk

Propeltidium : exterior lobes : fused Family DAESIIDAE

Long-legged; tiny to moderate-sized (6-23 mm)

Distribution : Africa, southern Europe, Near East, and South America

[7 subfamilies, 34 genera, 182 species]

-. Male cheliceral flagellum : paraxially immovable; essentially oval, membranous structure attached to the mesial surface by a disk

Propeltidium : exterior lobes : free to completely fused ...7

7. Male cheliceral flagellum : consists of an oval concave membrane, opened towards the middle of its whole length

Pedipalps : with pairs of lateroventral spines

Family AMMOTRECHIDAE

Male sternites with or without ctenidia; if present, situated in two paramedian areas on 1st or 1st & 2nd spiracle sternites
Cheliceral movable finger with or without tooth BI

Short-legged to long-legged; tiny to moderate-sized (5-22 mm)

Distribution : South America, Central America, southern North America and the adjacent Western Hemisphere islands [Nearctic]

[5 subfamilies, 22 genera, 72 species]

Mortolinae 1g, 1sp.

Nothopuginae 1g, 2spp.

Oltacolinae 1g, 3spp.

Saronominae 7g, 12spp.

Ammotrechinae 12g, 54spp.

- . Male cheliceral flagellum : consists of an ovoid vesicule, with a small anterior aperture

Pedipalps : without lateroventral pairs of spines

Family MUMMUCIIDAE

Male sternites (less evident in the female) with ctenidia situated on the posterior edge of 2nd postspiracle sternite

Cheliceral movable finger without tooth BI

Tiny to moderate-sized (5-20 mm)

Distribution : South America

[12 genera, 21 species]

8. Leg 1 : tarsi : without claws ...9

- . Leg 1 : tarsi : with 1 or 2 claws ...12

9. Leg 4 : without claws

Tarsal segmentation : 1-1-1-1

Family HEXISOPODIDAE

Heavy-bodied; short-legged; small to large (10-35 mm)

Propeltidium : exterior lobes : free to partly fused

Legs 2-4 : strongly fossorial and modified for digging

Male cheliceral flagellum : paraxially movable; mesially located, coiled, whiplike structure

(The species that lack a flagellum have dorsal dentate processes on the fixed cheliceral finger.)

Female genital opercula : not differentiated from other abdominal sternites and not specifically variable

Distribution : only in southern Africa

[4 genera, 24 species]

Siloanea 2spp.

Mossamedessa 2spp.

Chelypus 9spp.

Hexisopus 11spp.

- . Leg 4 : with claws
Tarsal segmentation : 1-1-1-(1-4) ...10
10. Small to large (7-41 mm)
Tarsal segmentation : 1-1-1-(1-3)
Male cheliceral flagellum : of one or more setae ...11
- . Tiny to moderate-sized (5-23 mm)
Tarsal segmentation : 1-1-1-(1-4)
Male cheliceral flagellum : membranous ...6

11. Tarsal segmentation : 1-1-1-(1-3)
Male cheliceral flagellum : paraxially immovable; composed of one or more modified setae on the mesial surface, usually hidden by associated setae
Female genital opercula : differentiated from other abdominal sternites and specifically variable

Family EREMOBATIDAE

Short-legged; heavy-bodied or long-legged; slender-bodied;
small to large (8.5-41 mm)

Legs 2,3 : tarsi : with a dorsal spinelike seta above claws

Distribution : southern North America, Central America

[Nearctic]

[7 genera, 119 species]

Eremothera	1 sp.
Horribates	1 sp.
Chanbria	4 spp.
Eremorhax	16 spp.
Hemerotrecha	24 spp.
Eremochelis	25 spp.
Eremobates	48 spp.

- . Tarsal segmentation : 1-1-1-(1-2)
Male cheliceral flagellum : paraxially immovable; composed of 1-5 elongated or enlarged plumose setae that may be situated in a bundle and associated with other plumose setae on the mesial surface
Female genital opercula : not differentiated from other abdominal sternites and not specifically variable

Family MELANOBLOSSIDAE

Long-legged; small to moderate-sized (7-30 mm)

Distribution : southeastern Asia and South Africa

[Palearctic]

[8 genera, 18 species]

Daesiella	1 sp.
Dinorhax	1 sp.
Microblossia	1 sp.
Trichotoma	1 sp.
Unguiblossia	1 sp.
Lawrencega	4 spp.
Melanoblossia	4 spp.
Lipophaga	5 spp.



12. Small to moderate-sized (8-26 mm); long-legged
 Tarsal segmentation : 1-1-1-1
 Female genital opercula : differentiated from other abdominal sternites and specifically variable
 ...13
- . Small to large (7-41 mm); short to long-legged
 Tarsal segmentation : 1-1-1-(1-3)
 Female genital opercula : differentiated or not
 ...11
13. Chelicerae : multidentate
 Propeltidium : exterior lobes : posteriorly fused
 Male cheliceral flagellum : paraxially immovable; fanlike to coiled, whiplike seta located on the mesial surface, with associated modified setae and a dorsal cheliceral horn
 Family KARSCHIIDAE
 (8-20 mm)
 Distribution : Asia and Near East to southeastern Europe and northwestern Africa
 [5 genera, 41 species]
 Barrus 1 sp.
 Rhinippus 2 spp.
 Barrella 4 spp.
 Eusimonia 13 spp.
 Karschia 21 spp.
- . Chelicerae : not multidentate
 Propeltidium : exterior lobes : free
 Male cheliceral flagellum : paraxially immovable; dorsal, more or less membranous process associated with one or more strongly modified setae
 Family GYLIPPIDAE
 (11-26 mm)
 Distribution : central Asia to Near East
 [5 genera, 14 species]
 Acanthogylippus 1 sp.
 Hemigylippus 1 sp.
 Gylippus 3 spp.
 Anoplogylippus 4 spp.
 Paragylippus 5 spp.



Simplified Key to Solpugid Families

1. Anus : ventrally located Family RHAGODIDAE
- Anus : terminally located ...2
2. Tarsal segmentation : 1-4-4-(6-7) Family SOLPUGIDAE
- Tarsal segmentation : 1-2-2-(2-4) ...3
- Tarsal segmentation : 1-1-1-(1-4) ...7
3. Tarsal claws of legs 2 to 4 : setaceous Family GALEODIDAE
- Tarsal claws of legs 2 to 4 : smooth ...4
4. Leg 1 : tarsi : with a pretarsus + 2 claws Family CEROMIDAE
- Leg 1 : tarsi : without claws ...5
5. Male cheliceral flagellum : paraxially movable
Propeltidium : exterior lobes : fused
Distribution : mainly Palearctic Family DAESIIDAE
- Male cheliceral flagellum : paraxially immovable
Propeltidium : exterior lobes : free to completely fused
Distribution : only Nearctic ...6
6. Pedipalps: with pairs of lateroventral spines Family AMMOTRECHIDAE
- Pedipalps: without lateroventral spines Family MUMMUCIIDAE
7. Leg 1 : tarsi : without claws ...8
- Leg 1 : tarsi : with 1 or 2 claws ...11
8. Leg 4 : without claws Family HEXISOPODIDAE
- Leg 4 : with claws ...9
9. Small to large (7-41 mm)
Male cheliceral flagellum : of one or more setae ...10
- Tiny to moderate-sized (5-23 mm)
Male cheliceral flagellum : membranous ...5
10. Tarsal segmentation : 1-1-1-(1-3)
Male cheliceral flagellum : composed of one or more modified setae
Female genital opercula : differentiated from other abdominal
sternites and specifically variable
Distribution : Nearctic Family EREMOBATIDAE
- Tarsal segmentation : 1-1-1-(1-2)
Male cheliceral flagellum : composed of 1-5 enlarged plumose setae
Female genital opercula : not differentiated
Distribution : Palearctic Family MELANOBLOSSIDAE



11. Small to moderate-sized (8-26 mm); long-legged
Tarsal segmentation : 1-1-1-1
Female genital opercula : differentiated from other abdominal
sternites and specifically variable ...12
- Small to large (7-41 mm); short to long-legged
Tarsal segmentation : 1-1-1-(1-3)
Female genital opercula : differentiated or not ...10
12. Chelicerae : multidentate Family KARSCHIIDAE
- Chelicerae : not multidentate Family GYLIPPIDAE

References

- Maury, E.A. 1980
Presencia de la familia Daesiidae en América del Sur con la
descripción de un nuevo género (Solifugae).
J.Arachnol., 8(1): 59-67.
- , 1984
Las Familias de Solifugos Americanos y su distribución geográfica
(Arachnida, Solifugae).
Physis, Secc.C, 42(103): 73-80.
- Muma, M.H. 1982
Solpugida. In: S.P.Parker ed., Synopsis and classification of
living organisms. 2: 102-104, pls.99-100. McGraw-Hill Book Co.,
New York

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Introduction

In September 1980, Schawaller's "Bibliographie der rezenten und fossilen Pseudoscorpionidea 1890-1979 (Arachnida)" appeared to extend the bibliographies of Beier in his great works (especially : "Pseudoscorpionidea I & II." Das Tierreich, 57,58. 1932) to reach the end of 1979. That bibliography was, and still, of great importance to any arachnologist who studies pseudoscorpions. Therefore, I prepared this short bibliography to cover the last ten years after Schawaller's bibliography.

This list includes 403 papers published between 1980 and 1989 with the exception of a few papers published in 1979 and 1990, and 26 papers in press "sous presse".

This work depends mainly on the C.I.D.A.'s "Liste des Travaux Arachnologiques" (1980-1990), the Entomology Abstracts (1980-1988), and the publications of the British Arachnological Society, American Arachnological Society and Revue Arachnologique until the mid of 1990.

The titles are arranged here alphabetically by the author name (and chronologically within this arrangement). Key words are bold typed to facilitate looking for papers of a special topic.

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Bibliography

A

- Adis, J. 1987
Extraction of arthropods from neotropical soils with a modified Kempson apparatus.
J.Trop.ecol.3(May) P2, 131.
- , Mahnert, V. 1985
On the natural history and ecology of Pseudoscorpiones (Arachnida) from an **Amazonian** blackwater inundation forest.
Amazoniana, 9(3): 297-314.
- , Mahnert, V., de Moraes, J.W., Rodrigues, J.M.G. 1988
Adaptation of an **Amazonian** pseudoscorpion (Arachnida) from dryland forests to inundation forests.
Ecology, 69(1): 287-291.
- Almquist, S. 1982
Spiders, harvestmen and pseudoscorpions in spruce plantations in South Scania, **Sweden** (Arachnida).
Ent.Tidskr., 103: 97-105.
- Andersen, M. 1987
Lamprochernes nodosus (Schrank, 1761) found in **Denmark** (Pseudoscorpiones).
Ent.Medd., 55(1): 23-25. [In Danish]
- 1988
The pseudoscorpion Anthrenochernes stellae refound in **Denmark**.
Ent.Medd., 56(3): 125-126. [In Danish]
- Anonymous 1987
Olpium (Koch) 1873, Arachnida. Obisium pallipes Lucas, 1846 designated as **type** species interpretation of the nominal species Olpium kochi Simon, 1881.
Bull.Zool.Nomencl., 44(1): 53-54.
- 1989
Chelifera Geoffroy, 1762 (Arachnida, Pseudoscorpionida) **conserved**.
Bull.Zool.Nomencl., 46(2): 143-144.

B

- Bawa, S.R., Werner, G. 1988a
Mitochondrial changes in spermatogenesis of the pseudoscorpion Diplotemnus sp.
J.Ultrastruct.Mol.Struct.Res., 98(3): 281-293.
- , -- 1988b
Cyst and flagellar sheath formation in Diplotemnus sp. **spermiogenesis**.
J.Ultrastruct.Mol.Struct.Res., 101: 51-61.
- Beier, M. 1980
Pseudoscorpionida. Ausbeute von den **Andaman-Inseln**.
Boll.Mus.civ.Stor.nat.Verona, 7: 293-295.
- 1982
Zoological results of the British speleological expedition to Papua **New Guinea** 1975. IX. Pseudoscorpionidea.
Acta zool.bulg., 19: 43-45.

- Benedict, E.M., Malcolm, D.R. 1982
Pseudoscorpions of the family **Chernetidae** newly identified from **Oregon** (Pseudoscorpionida, Cheliferoidea).
J.Arachnol., 10(2): 97-109.
- Bliss, P., Lippold, K. 1987
Pseudoscorpione (Arachnida, Pseudoscorpiones) aus dem Hakelwald im **Nordharzvorland**.
Hercynia, N.F. 24(1): 42-47.
- , Sacher, P. 1989
Bibliographie zur Spinnentierfauna (Arachnida : Araneae, Opiliones, Pseudoscorpiones) der Deutschen Demokratischen Republik. 1. Nachtrag.
Hercynia, N.F. 26(2): 182-189.
- Boghean, V. sous presse
Sur un pseudoscorpion **cavernicole** nouveau, **Chthonius** (C.) **monicae** n.sp. (Arachnida, Pseudoscorpionida, Chthoniidae).
Miscellanea.Inst.Speol."Emile Racovitza".
- Bolokan, V.I. 1984
Order False-scorpions/ Pseudoscorpiones. In: Animal world of **Moldavia**. Bryozoa, Mollusca, Arthropoda.
Kishinev,"Stiinsa": 203-204.
- Brach, V. 1979
Species diversity and distributional relationships of pseudoscorpions from slash pine (**Pinus elliotii** Eng.) in **Florida** (Arachnida, Pseudoscorpionida).
Bull.South Calif.Acad.Sci., 78(1): 32-39.
- Braun, M., Beck, L. 1986
Zur Biologie eines **Buchenwaldbodens**. 9.Die Pseudoskorpione.
Carolinea, 44: 139-148.

C

- Callaini, G. 1979a
Notulae Chernetologicae I. Note preliminari sugli pseudoscorpioni della Sardegna: **Roncus dallai**, nuova specie della **Sardegna** meridionale
Redia, 62: 111-119.
- 1979b
Notulae Chernetologicae II. Osservazioni su alcuni pseudoscorpioni delle **Isole Eolie**.
Redia, 62: 129-145.
- 1979c
Notulae Chernetologicae III. Gli pseudoscorpioni della **farma** (Arachnida).
Redia, 62: 339-354.
- sous presse
Notulae Chernetologicae IV. Considerazioni sugli pseudoscorpioni dell'altopiano del **Cansiglio**.
Animalia.
- 1981a
Notulae Chernetologicae V. Il sottogenere **Ehippochthonius** in **Corsica** (Arachnida, Pseudoscorpionida, Chthoniidae).
Ann.Mus.civ.Stor.Nat.Genova, 83: 307-323.

- 1981b
 -- Notulae Chernetologicae VI. Una nuova specie di **Neobisiidae** delle **Alpi Apune** (Arachnida, Pseudoscorpionida). *Fragm. Entomol.*, 16: 9-17.
- 1981c
 -- Notulae Chernetologicae VII. Un nuovo **Chthonius** dell'Italia Settentrionale (Pseudoscorpionida, Arachnida). *Redia*, 63: 203-214.
- 1981d
 -- Notulae Chernetologicae VIII. **Neoccitanobisium ligusticum** n.gen., n.sp., della **Liguria Occidentale** (Arachnida, Pseudoscorpionida, Neobisiidae). *Ann. Mus. Civ. St. Nat. Genova*, 83: 523-538.
- 1982a
 -- Étude comparative de la **membrane pleurale** des pseudoscorpions au microscope électronique à balayage. *Atti Soc. tosc. Sc. nat. Mem.*, B, 88, suppl. : 16-26.
- 1982b
 -- L'ultrastruttura dell'**occhio** di **Neobisium muscorum** Leach (Arachnida, Pseudoscorpionida, Neobisiidae). *Redia*, 64: 217-228.
- 1984
 -- Notulae Chernetologicae 16. Contributo alla conoscenza degli pseudoscorpioni d'**Algeria** (Arachnida). *Animalia*, 10(1-3): 211-235.
- 1985a
 -- Notulae Chernetologicae 17. Osservazioni su alcune specie di **Chthonius** del sottogenere **Ephippiochthonius** Beier (Arachnida, Pseudoscorpionida, Chthoniidae). *Ann. Mus. civ. Stor. nat. Giacomo Doria*, 85: 125-159.
- 1985b
 -- Speleobiologia della **Somalia**. **Cryptocheiridium somalicum** n.sp. (Arachnida, Pseudoscorpionida) delle grotte di Mugdile e Showli Berdi. *Monit. Zool. Ital.*, Suppl. 20(10): 181-189.
- 1986a
 -- **Mesochelifer insignis**, une nouvelle espèce de l'**Algérie** septentrionale (Arachnida, Pseudoscorpionida, Cheliferidae). *Rev. Arachnol.*, 7(1): 1-8.
- 1986b
 -- Notulae Chernetologicae 14. Ricerche sulla fauna **Appenninica**. 148. Osservazioni su alcune specie italiane del genere **Acanthocreagris** Mahnert. *Boll. Mus. civ. Stor. nat. Verona*, 11: 349-377.
- 1986c
 -- Notulae Chernetologicae 15. Appunti su alcune specie italiane della famiglia **Chernetidae** Menge (Arachn., Pseudoscorp.). *Boll. Mus. civ. Stor. nat. Verona*, 11: 379-401.
- 1986d
 -- Notulae Chernetologicae 19. Pseudoscorpioni dell'**Italia** settentrionale nel Museo Civico di Storia Naturale di Verona (Arachnida). *Boll. Mus. civ. Stor. nat. Verona*, 12: 229-255.

- 1986e
 --- Notulae Chernetologicae 20. Pseudoscorpioni della **grotta** di Trecchina (**Italia** meridionale).
 Boll.Mus.civ.Stor.nat.Verona, 13: 69-79.
- 1986f
 --- Notulae Chernetologicae 22. Su alcune specie di **Cheliferidae** della regione **mediterranea** (Arachnida, Pseudoscorpionida).
 Boll.Mus.civ.Stor.nat.Verona, 13: 237-294.
- 1986g
 --- Notulae Chernetologicae 25. Note sugli pseudoscorpioni raccolti in alcune **grotte** della **Toscana** settentrionale (Arach.).
 Redia, 69: 523-542.
- 1988
 --- Notulae Chernetologicae 24. Deux nouveaux **Neochthonius** de la région **méditerranéenne** occidentale (Arachnida, Pseudoscorpionida, Chthoniidae).
 Rev.Arachnol., 7(5): 175-184.
- , Dallai, R. 1984
 --- **Spermatozoides** et phylogénèse chez les **Garypides** (Arachnida, Pseudoscorpions).
 Rev.Arachnol., 5(4): 335-342.
- , --- 1989
 --- Les **spermatozoides** des Pseudoscorpions : étude comparative et considérations phylogénétiques.
 Rev.Arachnol., 8(6): 85-97.
- Cekalovic-K., T. 1984
 Catalogo de los Pseudoscorpiones y Palpigradi de **Chile** (Chelicerata).
 Bol.Soc.Biol.Concepcion, 55: 7-35.
- Chandrashekhar, S., Murthy, V.A., Suryanarayanan, T.S. 1988
 Behavioural changes in the pseudoscorpion **Oratemnus indicus** due to **Penicillium citrinum** infection.
 Comp.Physiol.Ecol., 13(3): 145.
- Clements, D.K. 1987
 A case of **phoresy** in the pseudoscorpion **Lamprochernes nodosus** (Schrank) (Pseudoscorpiones : Chernetidae).
 Ent.Mon.Mag., 123: 222.
- Cloudsley-Thompson, J.L. 1986
 Arachnids in **Key** environments **Sahara** desert. Ed.: J.L.Cloudsley-Thompson in coll.with Int.Union Conserv. Nature & nat.Res., Pergamon Press.
- Coddington, J.A., Larcher, S.F., Cokendolpher, J.C. sous presse
 The **systematic status** of Arachnida, exclusive of Acarina, in North America north of Mexico (Arachnida : Amblypygi, Araneae, Opiliones, Palpigradi, Pseudoscorpiones, Ricinulei, Schizomida, Scorpiones, Solifugae, Uropygi). In: Diversity and dynamics of North American insect and arachnid fauna.
- Corey, D.T., Taylor, W.K. 1987
 Scorpion, Pseudoscorpion and Opilionid faunas in three central **Florida** plant communities.
 Florida Sci., 50(3): 162-167.

Ćurčić, B.P.M. 1979a

The genus *Pararoncus* Chamberlin, 1938 (Pseudoscorpiones, Neobisiidae) in Japan.

Bull.Mus.Hist.nat., Belgrade, 34B : 169-180.

1979b

On some changes in the late **postembryogenesis** of the pseudoscorpion *Ditha proxima* (Beier, 1951).

Bull.Mus.Hist.nat., Belgrade, 34B : 191-200.

1979c

Growth and pedal **tactile setae** in pseudoscorpions.

Bull.Mus.Hist.nat., Belgrade, 34B : 223-229.

1980a

Biospeleološki izsledvaniya v Istočna Srbija.

Most, Nis, 59/60: 85-89. [In Bulgarian]

1980b

A new species of **cave-dwelling** pseudoscorpion from Serbia (Arachnida : Pseudoscorpiones : Neobisiidae).

Senckenbergiana biol., 60(3-4): 249-254.

1980c

The genus *Neobisium* Chamberlin, 1930 (Pseudoscorpiones, Arachnida): **postembryonic** development and **taxonomy** of subgenera. (Abstract)

C.R.8 Congr.intern.Arachnol., Vienna : 465.

1980d

Pseudoscorpions from **Nepal**.

Bull.Mus.Hist.nat., Belgrade, 35B : 77-101.

1980e

Accidental and **teratological** changes in the family **Neobisiidae** (Pseudoscorpiones, Arachnida).

Bull.Br.arachnol.Soc., 5(1): 9-15.

1981a

New **cave-dwelling** pseudoscorpions from Serbia.

Bull.75 Acad.serbe.sci.arts., Cl.sci.nat.math., Belgrade, 21: 105-114.

1981b

Biospeleolska obeležja Istočne Srbije.

Zborn, rad. VIII Jugosl.speleol.kongr.,

Borsko Jezero 1980 : 119-124.

1981c

A revision of some **North American** pseudoscorpions (**Neobisiidae**, Pseudoscorpiones).

Bull.Mus.Hist.nat., Belgrade, 36B : 101-107.

1982a

Postembryonic development in the **Neobisiidae** (Pseudoscorpiones, Arachnida).

Monogr.Acad.serbe.sci.arts, Belgrade, DXLV, Dept.sci., 56: 1-90.

1982b

Americocreagris, a new genus of pseudoscorpions from the **United States**.

Bull.80, Acad.serbe.sci.arts., Cl.sci.math.nat., Sci.nat., Belgrade, 22: 47-50.

- 1982c
 -- New and little-known cave pseudoscorpions from Serbia.
 Rev.Arachnol., 3(4): 181-189.
- 1982d
 -- A new cavernicole pseudoscorpion from Macedonia.
 Fragm.Balcan., Skopje, 11: 145-150.
- 1982e
 -- **Trisetobisium** (Pseudoscorpiones, Neobisiidae), a new genus
 of pseudoscorpions based on Microcreagris fallax Chamberlin.
 Bull.Mus.Hist.nat.Belgrade, 37B: 57-61.
- 1983a
 -- Nove pecinske pseudoskorprije iz Srbije.
 Zborn.rad.Odb.kras speleol., Srpska akad.nauka umetn.,
 Beograd, Predsedn., 1: 135-145.
- 1983b
 -- A revision of some Asian species of **Microcreagris**
 Balzan, 1892 (Neobisiidae, Pseudoscorpiones).
 Bull.Br.arachnol.Soc., 6(1): 23-36.
- 1983c
 -- The biospeleological features of Eastern Serbia.
 Proc.First Europ.Reg.Conf.Speleol., Sofia 1980, 105-109.
- 1984a
 -- The genus **Neobisium** Chamberlin, 1930 (Neobisiidae,
 Pseudoscorpiones, Arachnida): on new species from
 the USSR and the taxonomy of its subgenera.
 Bull.Mus.Hist.nat.Belgrade, 39B: 123-153.
- 1984b
 -- On two new species of **Roncus** L.Koch, 1873 from Macedonia
 (Arachnida : Pseudoscorpiones : Neobisiidae).
 Senckenberg.biol., 65(1-2): 97-104.
- 1984c
 -- Relic and endemic pseudoscorpions in Serbia.
 Proc.X SIEEC, Budapest 1983: 280-282.
- 1984d
 -- A revision of some North American species of **Microcreagris**
 Balzan, 1892 (Arachnida: Pseudoscorpiones: Neobisiidae).
 Bull.Br.arachnol.Soc., 6(4): 149-166.
- 1984e
 -- The origin and genesis of certain pseudoscorpion genera
 in Eurasia.
 Proc.9 Yugosl.Congr.Speleol., Karlovac 1984, 521-527.
- 1985a
 -- A revision of some species of **Microcreagris** Balzan, 1892
 (Neobisiidae, Pseudoscorpiones) from the USSR and
 adjacent regions.
 Bull.Br.arachnol.Soc., 6(8): 331-352.
- 1985b
 -- On the presence of Neobisium korabense Ćurčić, 1982
 (Pseudoscorpiones, Neobisiidae) in Macedonia.
 Fragm.Balcanica, Skopje, 12: 169-177.

- 1986a
 --- On the origin and biogeography of some pseudoscorpions of the **Balkan Peninsula**.
 Proc. 3rd int. Congr. Zoogeogr. Ecol. Greece and adj. Reg., Biol. Gallo-Hellenica, 12: 85-92.
- 1986b
 --- On the taxonomy and biogeography of **Microcreagris**-related genera in **Eurasia** (Neobisiidae, Pseudoscorpiones).
 C. R. IX Coll. Europ. Arachnol., Mem. Soc. r. belge Ent., 33: 75-79.
- 1986c
 --- **Chthonius (C.) stevanovici** (Chthoniidae, Pseudoscorpiones), a new pseudoscorpion species from East **Serbia**.
 Rec. rapp. Com. karst speleol., II, Ed. spec., Acad. Serbe sci. arts, DLXVIII, Présidence, 3: 141-154.
- 1986d
 --- Taxonomy and geographic distribution of some **Microcreagris**-related genera (Neobisiidae, Pseudoscorpiones).
 Actas X Congr. Int. Arachnol. Jaca, España, 1: 321-326.
- 1987
 --- **Insulocreagris**, a new genus of pseudoscorpions from the **Balkan Peninsula** (Pseudoscorpiones, Neobisiidae).
 Rev. Arachnol., 7(2): 47-57.
- 1988a
 --- On the taxonomic status of **Chthonius caecus iugoslavicus** Ćurčić, 1972 (Chthoniidae, Pseudoscorpiones).
 Fragm. Balcanica, Skopje, 14: 1-10.
- 1988b
 --- Les pseudoscorpions **cavernicoles** de la **Yougoslavie** : développement historique et implications biogéographiques.
 Rev. Arachnol., 7(4): 163-174.
- 1988c
 --- **Cave-dwelling** pseudoscorpions of the **Dinaric Karst**.
 Acad. Sci. Art. Sloc., Cl. IV, Hist. Nat., Opera, 26, Inst. Biol. Ioannis Hadzi, 8: 1-192.
- 1988d
 --- On the origin and evolution of some **cave** pseudoscorpions of the **Dinaric** and **Carpatho-Balkan** Karst.
 Rec. rapp. Com. karst spéléol., III, Ed. spéc., Acad. Serbe sci. arts, Belgrade, 3: 167-177.
- 1988e
 --- **Edaphism** and **cave** pseudoscorpions.
 Rec. rapp. Com. karst spéléol., III, Ed. spéc., Acad. Serbe sci. arts, Belgrade, 3: 179-185.
- 1988f
 --- Some remarks on the evolution of **Dinaric** cave pseudoscorpions.
 XI Coll. Europ. Arachnol., Berlin 1988, Techn. Univ. Berlin Dok., 38: 287-293.
- 1989a
 --- Segmental **anomalies** in some **European Neobisiidae** (Pseudoscorpiones, Arachnida). Part I.
 Acta Arachnologica, 37(2): 77-87.

- 1989b
 -- Segmental anomalies in some European Neobisiidae (Pseudoscorpiones, Arachnida). Part II. Acta Arachnologica, 38(1): 1-10.
- 1989c
 -- Further revision of some North American false scorpions originally assigned to Microcreagris Balzan (Pseudoscorpiones, Neobisiidae). J.Arachnol., 17(3): 351-362
- 1989d
 -- Neke biogeografske i evolucione osobenosti faune pseudoskorpija u pecinama dinarskog krasa. [On some biogeographical and evolutionary characteristics of the pseudoscorpion fauna in caves of the Dinaric Karst.] III Simp.fauni Srbije, Beograd, 45.
- 1990
 -- Tyrannochthonius psoglavi, a new species of cave pseudoscorpion from the Balkan Peninsula (Chthoniidae, Pseudoscorpiones). Rev.Arachnol., 9(1): 1-9.
 sous presse
- A new species of the genus Roncus L.Koch, 1873 (Neobisiidae, Pseudoscorpiones) from East Serbia.
 Mem.Biospeol., Moulis.
 sous presse
- Chthonius (Chthonius) lesnik (Chthoniidae, Pseudoscorpiones), a new pseudoscorpion species from Serbia.
 Mem.Biospeol., Moulis.
 sous presse
- Cave pseudoscorpions of Eastern Serbia: origin and biogeographical implications.
 C.R.12eme Coll.Europ.Arachn., Paris 1990.
 , Beron, P. 1981
- Nove i malo poznate pecinske pseudoskorpije iz Bugarske (Neobisiidae, Pseudoscorpiones, Arachnida). [New and little known cave-dwelling pseudoscorpions in Bulgaria.] Glas, Acad.serbe sci.arts, Belgrade, Sci.nat.math., 48: 63-85.
 , Dimitrijević, R.N. 1982
- On abnormalities of abdominal segmentation in Neobisium carpaticum Beier (Neobisiidae, Pseudoscorpiones, Arachnida). Rev.Arachnol., 4: 143-150.
 , -- 1983
- Three more examples of abnormal segmentation of the abdomen in Neobisium carpaticum Beier, 1934 (Neobisiidae, Pseudoscorpiones, Arachnida). Proc.Entom.Soc.Washington, 85(2): 362-365.
 , -- 1984a
- Two more examples of sternal anomaly in Neobisium carpaticum Beier and Roncus lubricus L.Koch (Pseudoscorp., Neobisiidae). Proc.X.SIEEC, Budapest 1983: 283-285.
 , -- 1984b
- An abnormal carapaco-abdominal junction in Neobisium carpaticum Beier, 1934 (Neobisiidae, Pseudoscorpiones). Arch.sci.biol., Belgrade, 36(1/4): 9P-10P.

- , 1984c
The endemic and relict genera of pseudoscorpions in Yugoslavia.
Proc. 9. Yugoslav. Congr. Speleol., Karlovac 1984, 529-534.
- , 1984d
Abdominal deficiencies in four species of the Neobisiidae
(Pseudoscorpiones, Arachnida).
Rev. Arachnol., 6(2): 91-98.
- , 1986a
Teratology of abdominal tergites and sternites in Neobisium
carpaticum Beier (Neobisiidae, Pseudoscorpiones).
C.R. 9e Coll. Europ. Arachnol., Bruxelles 1985,
Mem. Soc. r. belge Ent., 33: 81-84.
- , 1986b
Abnormalities of carapacial and abdominal segmentation in
Neobisium Chamberlin (Neobisiidae, Pseudoscorpiones).
Actas X Congr. Int. Arachnol., Jaca, España, 1: 17-24.
- , 1986c
Biogeography of cave pseudoscorpions of the Balkan Peninsula
Proc. 3rd Europ. Congr. Entomol., Amsterdam 1986, 3: 425-428.
- , 1987
Two segmental anomalies in Chthonius ischnocheles (Hermann)
(Chthoniidae, Pseudoscorpiones).
Arch. sci. biol. Belgrade, 39: 1p-2p.
- , 1988a
Segmental anomalies in Neobisium carpaticum Beier
(Neobisiidae, Pseudoscorpiones) from the Botanical
Garden in Belgrade, Yugoslavia.
Acta Mus. Mac. Sci. Nat., Skopje, 15: 135-150.
- , 1988b
Segmental deficiencies in some Neobisiidae
(Pseudoscorpiones, Arachnida).
XI Coll. Europ. Arachnol. Berlin 1988.
Techn. Univ. Berlin Dok., 38: 89-98.
- , 1989
On pedipalpal anomalies in Neobisium simoni (L. Koch) and
N. bernardi Vachon (Neobisiidae, Pseudoscorpiones, Arachnida).
Proc. Ent. Soc. Washington, 91: 290-291.
- , 1990
An example of partial duplication of the abdomen in Neobisium
simoni (Pseudoscorpiones, Neobisiidae).
J. Arachnol., 18(1): 113-115.
- , sous presse
Teratological variation in Chthonius ischnocheles (Hermann) and
C. aff. tetrachelatus (Preyssler) (Chthoniidae, Pseudoscorpiones).
C.R. 12eme Coll. Europ. Arachn., Paris 1990.
- , Krunić, M. D., Brajković, M. M. 1981
Further records of teratological changes in the Neobisiidae
(Arachnida, Pseudoscorpiones).
Bull. Br. arachnol. Soc., 5(6): 280-284.
- , 1983
Tergal and sternal anomalies in Neobisium Chamberlin
(Neobisiidae, Pseudoscorpiones, Arachnida).
J. Arachnol., 11(2): 243-250.

- , Legg, G. sous presse
On the identity and external **morphology** of four species of **Roncocreagris** Mahnert, 1974 (Neobisiidae, Pseudoscorpiones). *Fragm. Balcanica*, Skopje.
- Cuthbertson, D.R. 1982
Pseudoscorpions attached to flies : **phoresy** or predation ? *Newsl. Br. arachnol. Soc.*, 34: 4.
1984
- **Catalepsy** and **phoresy** in pseudoscorpions.
Newsl. Br. arachnol. Soc., 39: 3.

D

- Dashdamirov, S.D. 1988
A new pseudoscorpion species of the genus **Acanthocreagris** (Pseudoscorpiones, Neobisiidae) from **Azerbaijan**. *Zool. Zhurn.*, 77(9): 1414-1416.
- Droglä, R. 1983
Erstnachweis von drei Pseudoskorpion-Arten für die DDR (Arachnida, Pseudoscorpiones). *Faun. Abh. Mus. Tierk. Dresden*, 11: 191.
1988
- Pseudoskorpione des Deutsch Paulsdorfer Waldes (Oberlausitz) mit Beschreibung einer Pedipalpen**anomalie** (Arachnida, Pseudoscorpiones). *Abh. Ber. Naturkundemus. Görlitz*, 62(10): 17-20.
1988
- Pseudoskorpione aus dem Naturschutzgebiet "Ostufer der Müritz". Abberationen und eine für die DDR neue Art (Arachnida, Pseudoscorpiones). *Zool. Rundbr. Neubrandenburg*, 5: 10-15.
- Dumitrescu, M. sous presse
Ordinul Pseudoscorpionida. In : *Fauna ilustrata a Romaniei*, 1; Ed. Stiint. enciclop., Bucuresti.
- , Orghidan, T. 1981
Representants de la famille **Cheiridiidae** (Pseudoscorpionida) de **Cuba**. *Result. Exp. biospéol. cubano-roumaines Cuba*, 3, Bucarest, 77-87.
1986
- **Acanthocreagris mahnerti** sp.n. (Pseudoscorpiones, Neobisiidae). *Rev. suisse Zool.*, 93(1): 51-58.

E

- El-Hennawy, H.K. 1988a
Key to Pseudoscorpionid families (Arachnida : Pseudoscorpionida). *Serket* 1(3): 1-8.
1988b
- Pseudoscorpions of **Egypt**, key and list of species. *Serket* 1(3): 9-18.
1988c
- **Hysterochelifer tuberculatus** (Lucas, 1846) (Pseudoscorpionida : Cheliferidae) in **Jordan**. *Serket* 1(3): 20.

Estany, J. 1980

Quelques remarques à propos de Larca hispanica Beier et Larca spelaea Beier (Pseudoscorpionida, Garypidae).
C.R. 5 Coll.Arachnol.Expr.fr., Barcelona : 65-70.

1981

Contribución a la fauna cavernicola del Pais Vasco.
Pseudoscorpiones.
Kobie, Bilbao, 10: 526-528.

F

Fussey, G.D. 1982

A new pseudoscorpion for the north of England.
Naturalist, 107: 111-112.

G

Gabbutt, P.D. 1981

The thermal and photoecology of Pseudoscorpiones.
Amer.Arachnol., 24: 16. (Abstract)

, Aitchison, C.W. 1980

The effect of temperature and season on the number of hibernation chambers built by adult pseudoscorpions.
C.R. 8 Congr.intern.Arachnol., Vienna : 57-60

Gaisberger, K. 1984

Bemerkungen zum Vorkommen von Pseudoskorpionen im Toten Gebirge (Österreich).
Die Höhle, 35: 57-58.

Gardini, G. 1979

Catalogo degli pseudoscorpioni cavernicoli italiani (Pseudoscorpioni d'Italia VIII).

Mem.Soc.ent.Ital., 58: 95-140.

1980

Ridescrizione di Chthonius (C.) irregularis Beier, 1961 e C. (E.) conci Beier, 1953.

Atti Mus.civ.Stor.nat.Milano, 121: 181-188.

1981a

Pseudoscorpioni cavernicoli Sardi. I. Chthoniidae (Pseudoscorpioni d'Italia, X).

Rev.Arachnol., 3(3): 101-114.

1981b

Identita di Chthonius tetrachelatus fuscimanus Simon, 1900 e ridescrizione di Chthonius (E.) nanus Beier, 1953.

(Pseudoscorpioni d'Italia, XI).

Ann.Mus.civ.Stor.nat.Genova, 83: 261-270.

1981c

Roncus caralitanus n.sp. della Sardegna meridionale (Pseudoscorpionida, Neobisiidae) (Pseudoscorpioni d'Italia, XIII).

Boll.Soc.ent.Ital., 113(8-10): 129-135.

1981d

Raccolta, conservazione, allevamento e studio degli pseudoscorpioni (la parte).

Boll.Soc.ent.Ital., suppl., 113(8-10): 13-16.

- sous presse
- Pseudoscorpioni **cavernicoli italiani**
(Pseudoscorpioni d'Italia VII).
Lav.Soc.Ital.Biogeogr.
1982a
- **Raccolta, conservazione, allevamento e studio degli**
pseudoscorpioni (2a parte).
Boll.Soc.ent.Ital., suppl., 114(1-3): 1-7.
1982b
- Compléments à la description de **Roncus euchirus** (Simon, 1879)
(Pseudoscorpionida, Neobisiidae).
Rev.Arachnol., 4: 151-155.
1982c
- Pseudoscorpioni **cavernicoli Sardi II. Neobisiidae e Chernetidae**
con considerazioni sui Neobisiinae cavernicoli
(Pseudoscorpioni d'Italia XII).
Fragm.ent., 16(2): 89-115.
1982/83
- **Balkanoroncus baldensis** n.sp. delle Prealpi Venete (Pseudo-
scorpionida, Neobisiidae) (Pseudoscorpioni d'Italia XIV).
Boll.Mus.civ.Stor.nat.Verona, 9: 161-173.
1983a
- Redescription of **Roncus lubricus** L.Koch, 1873, type-species of
the genus **Roncus** L.Koch, 1873 (Pseudoscorpionida, Neobisiidae).
Bull.Br.arachnol.Soc., 6(2): 78-82.
1983b
- **Larca italica** n.sp. **cavernicola** dell'Appennino Abruzzese
(Pseudoscorpionida, Garypidae) (Pseudoscorpioni d'Italia XV).
Boll.Soc.ent.Ital., 115(4-7): 63-69.
1985a
- Su alcuni Pseudoscorpioni **cavernicoli di Grecia**
(Pseudoscorpionida, Neobisiidae).
Boll.Mus.region.Sci.nat.Torino, 3(1): 53-64.
1985b
- **Neoccitanobisium ligusticum** Callaini (Ps., Neobisiidae).
Boll.Soc.ent.Ital., 117(1-3): 60.
1985c
- **Chthonius (E.) pieltaini** Beier (Pseudoscorpionida, Chthoniidae).
Boll.Soc.ent.Ital., 117(1-3): 60.
1985d
- **Microbisium suecicum** Lohmander (Pseudoscorpionida, Neobisiidae).
Boll.Soc.ent.Ital., 117(1-3): 60.
1985e
- Segnalazioni faunistiche italiane 39-45. **Chthonius (C.)**
lessiniensis Schawaller, **C.(E.) pieltaini** Beier.
Boll.Soc.ent.Ital., 117: 60-61.
1985f
- **Calocheiridius** cf. **mavromoustakisi** Beier & Turk (Ps., Olpiidae).
Boll.Soc.ent.Ital., 117(1-3): 61.
1985g
- **Beierochelifer peloponnesiacus** (Beier) s.l. (Ps., Cheliferidae).
Boll.Soc.ent.Ital., 117(1-3): 61.

- 1985h
 --- **Balkanoroncus baldensis** Gardini (Pseudoscorpionida, Neobisiidae)
 Boll.Soc.ent.Ital., 117(1-3): 61.
 --- sous presse
 Segnalazioni faunistiche italiane. 103. **Mesochelifer ressl**
 Mahnert (Pseudoscorpioni, Cheliferidae).
 Boll.Soc.ent.Ital., 119(2).
 1988
 --- Pseudoscorpioni cavernicoli greci, con descrizione di
Chthonius (E.) gasparoi n.sp. della Macedonia (Arachnida,
 Pseudoscorpionida) (Pseudoscorpioni di Grecia II)
 Atti.Mem.Commiss.Grotte "E.Boegan", Trieste, 27: 57-62.
 --- sous presse
 Pseudoscorpioni cavernicoli del Veneto (Arachnida)
 (Pseudoscorpioni d'Italia XIX).
 Boll.Mus.civ.Stor.nat.Verona.
 --- , Benelli, R. sous presse
 The external morphology of the pseudoscorpion **Roncus andreinii**.
 J.Zool., London.
 --- , Lattes, A., Rizzerio, R. 1981
 Variabilità morfometrica nel genere **Roncus** (Ps., Neobisiidae).
 Atti.48 Conv.U.Z.I., Boll.Zool., 48(suppl.): 59. (Abstract)
 --- , Rizzerio, R. 1985
 Materiali per una revisione del genere **Roncus** L.Koch, 1873
 (Pseudoscorpionida, Neobisiidae). I. Ridescrizione dei tipi
 di alcune specie italiane non cavernicole.
 Fragm.ent., 18(1): 47-79.
 --- , 1986a
 --- Materiali per una revisione del genere **Roncus** L.Koch, 1873.
 II. Ridescrizione dei tipi delle specie parablothroidi alpine
 e appenniniche (Pseudoscorpionida, Neobisiidae).
 Fragm.ent., 19(1): 1-56.
 --- , 1986b
 --- **Neobisium (O.) zolai** n.sp. delle Alpi Liguri e note su
Roncus ligusticus Beier, 1930 (Pseudoscorpionida, Neobisiidae).
 Boll.Soc.ent.Ital., 118(1/3): 5-16.
 --- , 1987
 --- **Roncus zolai** n.sp. cavernicola del Monte Albo, Sardegna
 nord-orientale (Pseudoscorpionida, Neobisiidae)
 (Pseudoscorpioni d'Italia XX).
 Fragm.ent., 19(2): 283-292.
 --- , 1987
 --- sous presse
 --- I **Roncus** eucavernicoli del gruppo siculus (Pseudoscorpionida,
 Neobisiidae) (Pseudoscorpioni d'Italia XXI).
 Boll.Soc.ent.Ital., 119(2).

H

- Haack, R.A., Wilkinson, R.C. 1987
 Phoresy by **Dendrochernes** pseudoscorpions on Cerambycidae
 (Coleoptera) and Aulacidae (Hymenoptera) in Florida.
 Amer.Midland Naturalist, 177(2): 369-374.

- Hahn, N.S., Matthiesen, F.A. 1982
Aspectos do comportamento de Paratemnus minor (Balzan, 1891)
(Pseudoscorpiones, Atemnidae).
C.R.9e Congr.brasil.Zool., 98-99.
- Halperin, J., Mahnert, V. 1987
On some **bark-inhabiting** Pseudoscorpiones (Arachnida)
from Israel.
Israel J.Ent., 21: 127-128.
- Hansen, H. 1988
Über die Arachnidenfauna von urbanen Lebensräumen in Venedig
(Arachnida : Pseudoscorpiones, Araneae).
Boll.Mus.civ.Stor.nat.Venezia., 38: 183-219.
- Harvey, M.S. 1981a
A checklist of the **Australian** Pseudoscorpionida.
Bull.Br.arachnol.Soc., 5(6): 237-252.
- 1981b
Geogarypus rhanatus sp.nov. (Pseudoscorpionida : Garypidae :
Geogarypinae), a generic addition to the **Australian** fauna.
Mem.Qld.Mus., 20(2): 279-283.
- 1982
A parasitic **Nematode** (Mermithidae) from the pseudoscorpion
Sternophorus hirsti Chamberlin (Sternophoridae).
J.Arachnol., 10(2): 192.
- 1984
The genus **Nannochelifer** Beier, with a new species from the
Coral Sea (Pseudoscorpionida, Cheliferidae).
J.Arachnol., 12(3): 291-296.
- 1985a
The **priority** of **Blothrus** Schiödte, 1847 over **Neobisium**
Chamberlin, 1930 (Neobisiidae : Pseudoscorpionida).
Bull.Br.arachnol.Soc., 6(8): 367-368.
- 1985b
The **systematics** of the family **Sternophoridae**
(Pseudoscorpionida)
J.Arachnol., 13(2): 141-209.
- 1985c
Pseudoscorpionida. In: Zoological Catalogue of **Australia**.
Austr.Governmt.Publ.Serv., Canberra, ACT 2601, 3: 126-155.
- 1986
The **Australian Geogarypidae**, new status, with a review of
the generic classification (Arachnida : Pseudoscorpionida).
Aust.J.Zool., 34(5): 753-758.
- 1987a
A revision of the genus **Synsphyronus** Chamberlin (Garypidae:
Pseudoscorpionida : Arachnida).
Aust.J.Zool., S.: 126-199.
- 1987b
Redescription and new synonyms of the cosmopolitan species
Lamprochernes savignyi (Simon) (Chernetidae: Pseudoscorpionida).
Bull.Br.arachnol.Soc., 7(4): 111-116.



- 1987c
 -- The occurrence in **Australia** of **Chthonius tetrachelatus** (Preyssler) (Pseudoscorpionida : Chthoniidae).
 Aust.ent.Mag., 13: 68-69.
- 1987d
 -- Redescriptions of **Geogarypus bucculentus** Beier and **Geogarypus pustulatus** Beier (Geogarypidae : Pseudoscorpionida).
 Bull.Br.arachnol.Soc., 7(5): 137-141.
- 1987e
 -- Case 2478. **Chelifer** Geoffroy, 1762 (Arachnida, Pseudoscorpionida), proposed **conservation**.
 Bull.Zool.Nomencl., 44(3): 188-189.
- 1988
 -- The **systematics** and **biology** of pseudoscorpions.
 In: **Australian Arachnology**. Eds.: A.D.Austin & N.W.Heather.
 Aust.ent.Soc.Miscellaneous publication No.5: 75-85.
- 1989a
 -- Two **new cavernicolous chthoniids** from **Australia**, with notes on the generic placement of the south-western Pacific species attributed to the genera **Paraliochthonius** Beier and **Morikawia** Chamberlin (Pseudoscorpionida : Chthoniidae).
 Bull.Br.arachnol.Soc., 8(1): 21-29.
- 1989b
 -- A **new species** of **Feaella** Ellingsen from north-western **Australia** (Pseudoscorpionida : Feaellidae).
 Bull.Br.arachnol.Soc., 8(2): 41-44.
- 1989c
 -- **Trichobothrial "Migration"** in diplosphyronid pseudoscorpions.
 Abstr.XI Int.Congr.Arachnol.Turku, Finland, 7-12 August 1989.
 Rep.Dept.Biol.Univ.Turku 19: 35.
- 1989d
 -- Pseudoscorpions from the **Krakatau Islands** and adjacent regions, **Indonesia** (Chelicerata : Pseudoscorpionida).
 Mem.Mus.Victoria, 49(2): 309-353.
- , Mahnert, V. 1985
 -- **Olpium** L.Koch, 1873 (Arachnida, Pseudoscorpionida, Olpiidae) : proposed **designation** of type species and related problems.
 Bull.Zool.Nomencl., 42(1): 85-88.
- Hentschel Ariza, E. 1981
 -- La evolution de la **foresia** en Pseudoscorpiones (Arachnida, Pseudoscorpionida).
 Folia entom.mex., 48: 44-45.
- , Muchmore, W.B. 1989
 -- **Cocinachernes foliosus**, a new genus and species of pseudoscorpion (Chernetidae) from **Mexico**.
 J.Arachnol., 17(3): 345-349.



Heurtault, J. 1980a

Données nouvelles sur les genres **Xenolpium**, **Antiolpium**, **Indolpium** et **Euryolpium** (Arachnides, Pseudoscorpions).
Rev.suisse Zool., 87(1): 143-154.

1980b

- La **néochétotaxie** majorante prosomatique chez les Pseudoscorpions Neobisiidae : **Neobisium pyrenaicum** et **N. mahnerti** sp.n.

C.R.5 Coll.Arachnol.Expr.fr., Barcelone (1979): 87-97.

1980c

- Quelques remarques sur les espèces françaises du genre **Rhacochelifer** Beier (Arachnida, Pseudoscorpions, Cheliferidae).
Bull.Mus.natn.Hist.nat., Paris, 4e sér., 2, A(1): 161-173.

1980d

- Complément à la description de **Minniza vermis** Simon, 1881, espèce-type du genre (Arachnides, Pseudoscorpions, Olpiidae).
Bull.Mus.natn.Hist.nat., Paris, 4e sér., 2, A(1): 175-184.

1980e

- Le développement **postembryonnaire** chez deux espèces nouvelles de pseudoscorpions **Olpiinae** du Venezuela.
Rev.Nordest.Biol., 3(1): 57-85.

1981

- Présence et signification dans la France méditerranéenne des espèces des genres **Beierochelifer**, **Cheirochelifer** et **Calocheiridius** (Arachnides, Pseudoscorpions).
C.R.6e Coll.Arachnol.Expr.fr., Modena-Pisa, 1981.

Atti Soc.Tosc.Sci.Nat., Mem., ser.B, 88, suppl., 209-222.

1983

- Pseudoscorpions de Cote d'Ivoire.
Rev.arachnol., 5(1): 1-27.

1986a

- **Petterchernes brasiliensis**, genre et espèce nouveaux de Pseudoscorpions du Bresil (Arachnides, Pseudoscorpionida, Chernetidae).
Bull.Mus.natn.Hist.nat., Paris, 4e sér., 2, A(2): 351-355.

1986b

- Pseudoscorpions **cavernicoles** de France: revue synoptique.
Mém.Biospéol., (1985), 12: 19-32.

1986c

- Les Pseudoscorpions de Madagascar: Réflexions sur la répartition géographique.
Proc.9 int.congr.Arachnol., Panama(1983): 127-129.

1990a

- **Neobisium (N.) maxvachoni**, new name for **Neobisium (N.) vachoni** Heurtault, 1968 (Arachnida, Pseudoscorpionida, Neobisiidae).
Bull.Br.arachnol.Soc., 8(4): 128.

1990b

- **Chamberlinarius**, new name for **Chamberlinius** Heurtault, 1983 (Arachnida, Pseudoscorpionida, Cheliferidae).
Bull.Br.arachnol.Soc., 8(4): 128.

- 1990c
 -- Les pseudoscorpions d'**Algérie** de la collection Biospeologica.
 Mem. Biospeol., 17: 197-202.
 -- sous presse
 Les Pseudoscorpions **cavernicoles**.
 Encycl. Spéol. Trav. Inst. "Emile Racovitza".
 -- sous presse
 Les Pseudoscorpions. In: Zoologie du sol.
 Trav. Inst. Spéol. "Emile Racovitza".
 -- , Kovoar, J. 1980
 Ultrastructure du complexe **mécanorécepteur** des chélicères
 de Pseudoscorpions.
 C.R. 8 Congr. intern. Arachnol., Vienna: 325-330.
 -- , Leclerc, Ph., Muñoz-Cuevas, A. sous presse
Morphologie de la **cornée** chez certains pseudoscorpions
 (Arachnides) **cavernicoles** et **épigés**.
 C.R. 1er Coll. Vision chez Invert., Muséum Paris, 1979.
 -- , Rebiere, J. 1983
 Pseudoscorpions des **Petites Antilles** I. Chernetidae,
 Olpiidae, Neobisiidae, Syarinidae.
 Bull. Mus. natn. Hist. nat., Paris, 4e sér., 5, A(2): 591-609.
 -- , Vanier, G. 1989
Heat resistance in two pseudoscorpions (**Garypidae**), one from
 the Namib desert, the other from the district of Genoa in Italy
 Abstr. XI Int. Congr. Arachnol. Turku, Finland, 7-12 August 1989.
 Rep. Dept. Biol. Univ. Turku 19: 37.
 Hong Youchong 1984
 Discovery of new **fossil** pseudoscorpionids in amber.
 Bull. Tianjin Inst. Geol. Miner. Resour. 8: 23-29. [In Chinese]

I

- Inzaghi, S. 1981
 Pseudoscorpioni raccolti dal Sig. M. Valle in midi di **Talpa**
europaea L. nella provincia di **Bergamo** con descrizione di
 una nuova specie del genere **Chthonius** C.L. Koch.
 Boll. Soc. ent. Ital., Genova, 113(4-7): 67-73.
 1983
 -- **Pseudoblothrus regalini** n.sp., da grotte della Provincia di
Bergamo (Italia sett.) (Pseudoscorpiones, Syarinidae).
 Atti Soc. Ital. Sci. nat. Mus. civ. Stor. nat. Milano, 124(1/2): 38-48.
 1987
 -- Una nuova specie del genere **Chthonius** s.str. delle Prealpi
Lombarde (Arachnida, Pseudoscorpiones, Chthoniidae).
 Ann. Mus. civ. Stor. nat., Brescia, 23(1986): 165-182.

J

- Janke, V., Kothén, G. 1988
 Zum Vorkommen der Pseudoscorpionidae im Staatswald Burgholz
 (**Solingen**) unter der Wirkung von Na-PCP.
 Jahresber. Naturwiss. Ver. Wupp, 41: 93-95.

- Jędryczkowski, W. 1985
Zaleszczotki (Pseudoscorpiones) Mazowsza. [Pseudoscorpions of **Mazovia**.]
Fragmenta Faunistica, Warszawa, 29: 77-83.
1987a
-- Zaleszczotki (Pseudoscorpiones) Bieszczadów. [Pseudoscorpions of **Bieszczady Mounts**.]
Fragmenta Faunistica, Warszawa, 30(21): 341-349.
1987b
-- Zaleszczotki (Pseudoscorpiones) Gor Świetokizysbich. [Pseudoscorpions of **Holy Cross Mounts**.]
Fragmenta Faunistica, Warszawa, 31(9): 135-157.
- Jones, R.E. 1985
The false-scorpions of **Norfolk**.
Transactions Norfolk Norwich Nat.Soc., 27(1): 67-71.
- Judson, M.L.I. 1980
On some **changes in the names of British Chelonethida** (Pseudoscorpionida) with a note on the status of **Chthonius** (C.) **dacnodes** Navas, 1918 in Britain.
Newsl.Br.arachnol.Soc., 28: 7-9.
1985
-- Redescription of **Myrmochernes** Tullgren (Chelonethida : Chernetidae).
Bull.Br.arachnol.Soc., 6(8): 321-327.
1987a
-- Sur la présence en **France** de **Chthonius** (C.) **halberti** Kew et de **Chthonius** (C.) **ressli** Beier avec remarques sur le rang de **Kewochthonius** Chamberlin et de **Neochthonius** Chamberlin (Arachnida, Chelonethida, Chthoniidae).
C.R.Xème Coll.Eur.Arachnol., Rennes.
1987b
-- Further records of pseudoscorpions (Arachnida) from **Hertfordshire**.
Trans.Hertfordshire Nat.Hist.Soc.Field Club, 29(8): 368-370.
1989
-- Form and function of the **coxal spines** of **Chthonioid** pseudoscorpions, based on species from **Cameroon** (Arachnida, Chelonethida).
Abstr.XI Int.Congr.Arachnol.Turku, Finland, 7-12 August 1989.
Rep.Dept.Biol.Univ.Turku 19: 43.
- K**
- Kerzhner, I.M. 1988
Comment on the proposed **conservation** of **Chelifer** Geoffroy, 1762 (Arachnida, Pseudoscorpionida).
Bull.Zool.Nomencl., 45(1): 49.
- Kobari, H. 1983
A seasonal change of the **age composition** in a population of the pseudoscorpion **Neobisium** (**Parobisium**) **pygmaeum** (Ellingsen) in a temperate deciduous forest.
Acta Arachnol., 31(2): 65-71.

- 1984
 -- Redescription of the male and redesignation of Neobisium (Parobisium) pygmaeum (Ellingsen) (Arachnida, Pseudoscorpionida).
 Acta Arachnol., 32(2): 55-64.
- Koponen, S., Sharkey, M.J. 1989
 Northern records of Microbisium brunneum (Pseudoscorpionida, Neobisiidae) from eastern Canada.
 J.Arachnol., 16(3): 388-390.
- Kovoor, J. 1986
 Comparative structure and histochemistry of silk-producing organs in Arachnids.
 In: W.Nentwig ed.: "Ecophysiology of Spiders", Springer Verlag, IV: 160-186.
- Krumpal, M. 1980
 Sturiky (Pseudoscorpionidea) goderskej Doliny (Velka Fatia). [Pseudoscorpions of Gadertals (Velka Fatia).]
 Entom.Probl., 16: 23-29.
- 1983a
 -- Zwei neue Diplotemnus-Arten aus der UdSSR (Pseudoscorpiones : Miratemnidae); über Pseudoscorpioniden-Fauna der UdSSR.II.
 Biologia (Bratislava), 38(2): 173-179.
- 1983b
 -- Neobisium (N.) vilcekii sp.n., ein neuer Pseudoscorpion aus der UdSSR (Neobisiidae, Pseudoscorpiones); über Pseudoscorpioniden-Fauna der UdSSR.IV.
 Biologia (Bratislava), 38(6): 607-612.
- 1984a
 -- Einige bemerkenswerte Pseudoskorpione aus der UdSSR.
 Acta entomol.Bohemoslav, 81(1): 63-69.
- 1984b
 -- Two new cavernicolous pseudoscorpions from the UdSSR (Pseudoscorpiones). On Pseudoscorpions fauna of the USSR.6.
 Biologia (Bratislava), 39(6): 637-646.
- 1986
 -- False scorpions (Pseudoscorpiones, Arachnida) from the caves of the USSR. On the fauna of False scorpions of the USSR.5.
 Biologia (Bratislava), 41(2): 163-172. [In Czech]
- 1987
 -- A new Dactylochelifera from Nepal-Himalaya (Arachnida, Pseudoscorpiones). [In Czech]
 Acta entomol.Bohemoslav, 84(3): 221-226.
- 1987
 -- Cyprich, D. 1987
 Pseudoscorpiones, Chernetidae.
 Biol.Bratisl., 42(2): 196. [In Slovak]
- Krunić, M.D., Ćurčić, B.P.M. 1981
 Correlation between the amount of supercooling and hibernation sites in insects and arachnids.
 Acta Entomol.Jugosl., 17: 131-135.

L

Leclerc, P. 1981

Nouveaux Chthoniidae cavernicoles de la bordure orientale des Cévennes (France) (Arachnides, Pseudoscorpions).

Rev.Arachnol., 3(3): 115-131.

1982a

Une nouvelle espèce de Pseudoscorpion cavernicole de la Drôme : Neobisium (Blothrus) auberti (Pseudoscorpions, Arachnides).

Rev.Arachnol., 4: 39-45.

1982b

Les pseudoscorpions des grottes des Sadoux (Drôme).

Ursus spelaeus, 7: 43-47.

1983

Neochthonius chamberlini, espèce nouvelle du sud de la France (Arachnides, Pseudoscorpions).

Rev.Arachnol., 5(2): 45-53.

1983

A propos d'une collecte de pseudoscorpions.

Ursus spelaeus, 8: 25.

1984

Notes chernotologiques.

Ursus spelaeus, 9: 53-56.

1985

Congo 84 : Prélèvements biospéléologiques: Araignées, Amblypyges, Uropyges et Pseudoscorpions.

In: "Expéditions Spéléologiques Congo 84", S.C.Albi : 79-81.

1989

Neobisium (N.) atlasense, nouvelle espèce de Neobisiidae cavernicole du Maroc (Pseudoscorpions, Arachnides).

Rev.Arachnol., 8(3): 45-51.

, Mahnert, V. 1988

A new species of the genus Levigatocreagris Čurčić (Pseudoscorpiones : Neobisiidae) from Thailand, with remarkable sexual dimorphism.

Bull.Br.arachnol.Soc., 7(9): 273-277.

Legg, G. 1987

Proposed taxonomic changes to the British pseudoscorpion fauna (Arachnida).

Bull.Br.arachnol.Soc., 7(6): 179-182.

, Jones, R.E. 1988

Synopses of the British Fauna (new series): Pseudoscorpions. Linnean Society of London.

Lippold, K. 1985

Pseudoskorpione aus dem NSG "Ostufer der Müritz".

Zool.Rdbrf.Bez.Neubrandenburg, 4: 40.

M

Mahnert, V. 1980a

Pseudoskorpione (Arachnida) aus **Höhlen Griechenlands** insbesondere **Kreta**.

Arch.Sci., Geneve, 32(3): 213-233.

1980b

Verbreitung der Pseudoskorpione (Arachnida) in **Kenya** (Ostafrika). [Abstract]

C.R.8 Congr.intern.Arachnol., Vienna : 470.

1980c

Zwei **neue Chthonius**-Arten (Pseudoscorpiones) aus **Höhlen Marokkos**.

Mitt.schweiz.ent.Ges., 53(2/3): 215-219.

1980d

Pseudoscorpions from the **Canary islands**.

Ent.scand., 11(3): 259-264.

1980e

Pseudoscorpiones. In: Arachnids of **Saudi Arabia**.

Fauna of Saudi-Arabia, 2: 32-48.

1980f

Chthonius (C.) **hungaricus** sp.n., eine neue Afterskorpion-Art aus **Ungarn** (Arachnida).

Folia entom.hung., 33(2): 279-282.

1980g

Pseudoskorpione (Arachnida) aus **Höhlen Italiens**, mit Bemerkungen zur Gattung **Pseudoblothrus**.

Le Grotte d'Italia, ser., 4, 8: 21-38.

1981a

Die Pseudoskorpione (Arachnida) **Kenyas**.

I. **Neobisiidae** und **Ideoroncidae**.

Rev.suisse Zool., 88(2): 535-559.

1981b

Mesochelifer **ressli** n.sp., eine mit **Chelifer cancroides** (L.) verwechselte Art aus **Mitteleuropa** (Pseudoscorpiones, Cheliferidae).

Veröff Mus.Ferdinand., Innsbruck, 61: 47-53.

1981c

Taxonomische Irrwege : **Olpium savignyi** Simon, **O.kochi** Simon, **O.bicolor** Simon (Pseudoscorpiones).

Folia entom.hung., 34(2): 95-99.

1982a

The pseudoscorpion genus **Corosoma** Karsch, 1879 with remarks on **Dasychnes** Chamberlin, 1929 (Pseudoscorpiones, Chernetidae).

J.Arachnol., 10(1): 11-14.

1982b

Höhlenpseudoskorpione aus **Norditalien** und der dalmatinischen Insel Krk.

Atti Mem.Comm.Grotte "E.Boegan", 20: 95-100.

1982c

Die Pseudoskorpione (Arachnida) **Kenyas**.

II. **Feaellidae**, **Cheiridiidae**.

Rev.suisse Zool., 89(1): 115-134.

- 1982d
 Die Pseudoskorpione (Arachnida) **Kenyas**. III. **Olpiidae**.
 Monit.zool.Ital., N.S.suppl. 16(11): 263-304.
- 1982e
Sigles trichobothriales chez les pseudoscorpions (Arachnida).
 Atti Soc.tosc.Sci.nat., Mem., 88, suppl.: 185-192.
- 1982f
 Die Pseudoskorpione (Arachnida) **Kenyas**. IV. **Garypidae**.
 Annls.hist.nat.Mus.natn.hung., 74: 307-329.
- 1982g
 Die Pseudoskorpione (Arachnida) **Kenyas**. V. **Chernetidae**.
 Rev.suisse Zool., 89(3): 691-712.
- 1982h
Neue höhlenbewohnende Pseudoskorpione aus Spanien, Malta und Griechenland (Arachnida, Pseudoscorpiones).
 Mitt.schweiz.entom.Ges., 55(3/4): 297-304.
- 1983a
 Die Pseudoskorpione **Kenyas**. VI. **Dithidae** (Arachnida).
 Rev.Zool.afr., 97(1): 141-157.
- 1983b
 Die Pseudoskorpione (Arachnida) **Kenyas**.
 VII. **Miratemnidae** und **Atemnidae**.
 Rev.suisse Zool., 90(2): 357-398.
- 1983c
 The genus **Caffrowithius** Beier, 1932, with the description of
 a new species from **South Africa** (Arachnida, Pseudoscorpiones).
 Ann.Natal Mus., 25(2): 501-510.
- 1983d
 Pseudoscorpiones from the **Hortobagy** National Park (Arachnida).
 In: Fauna of the Hortobagy National Park, 2: 361-363.
- 1984a
 Forschungen an der **Somalilandküste**. Am Strand und auf den Dünen
 bei Sar Uanle. 36. Pseudoscorpiones (Arachnida).
 Monit.zool.Ital., 19(suppl.): 43-66.
- 1984b
 Beitrag zu einer besseren Kenntnis der **Ideoroncidae** (Arachnida,
 Pseudoscorpiones) mit Beschreibung von sechs neuen Arten.
 Rev.suisse Zool., 91(3): 651-686.
- 1984c
 Pseudoscorpions (Arachnida) récoltés durant la mission
 spéologique espagnole au Pérou en 1977.
 Rev.Arachnol., 6(1): 17-28.
- 1985a
Roncus (**Parablothrus**) **comasi**, espèce nouvelle d'une grotte de
 la Tunisie (Pseudoscorpiones, Neobisiidae).
 Speleon, (1983) 26-27: 17-20.
- 1985b
 Pseudoscorpions (Arachnida) from the lower **Amazon** region.
 Revta.bras.entom., 29(1): 75-80.

- 1985c
 -- Weitere Pseudoskorpione (Arachnida) aus dem zentralen Amazonasgebiet (Brasilien). Amazoniana, 9(2): 215-241.
- 1985d
 -- Arthropodes épigés du Massif de San Juan de la Peña. III. Pseudoscorpions. Pirineos, 124(1): 73-86.
- 1986a
 -- Die Pseudoskorpione (Arachnida) Kenyas. VIII. Chthoniidae. Rev.suisse Zool., (1985) 92(4): 823-843.
- 1986b
 -- Une nouvelle espèce du genre *Tyrannochthonius* Chamb. des îles Canaries, avec remarques sur les genres *Apolpiolum* Beier et *Calocheirus* Chamberlin (Arachnida, Pseudoscorpiones). Mem.Soc.r.belge.Ent., 33: 143-153.
- 1986c
 -- *Parachernes gracilimanus* n.sp., a new pseudoscorpion species (Arachnida, Chernetidae) from Ecuador. Rev.suisse Zool., 93(3): 813-816.
- 1987
 -- Neue oder wenig bekannte, vorwiegend mit Insekten vergesellschaftete Pseudoskorpione (Arachnida) aus Südamerika. Bull.Soc.ent Suisse, 60(3-4): 403-416.
- 1988a
 -- Zwei neue *Garypininae*-Arten (Pseudoscorpiones : Olpiidae) aus Afrika, mit Bemerkungen zu den Gattungen *Serianus* Chamberlin und *Paraserianus* Beier. Stuttgarter Beitr.Naturk., ser.A, 420: 11pp.
- 1988b
 -- *Neobisium carcinoides* une espèce polymorphe? Bull.Soc.Arachnol., 1: 11. [Abstract]
- 1988c
 -- *Neobisium carcinoides* (Hermann, 1804) (Pseudoscorpionida, Neobisiidae), une espèce polymorphe? C.R.Xeme Coll.europ.Arachnol.Rennes 1987. Bull.Soc.sci.Bretagne, 59 HS 1: 161-174.
- 1988d
 -- Die Pseudoskorpione (Arachnida) Kenyas. Familien *Withiidae* und *Cheliferidae*. Tropical Zool., 1: 39-89.
- 1988e
 -- Une nouvelle espèce du genre *Tyrannochthonius* (*Lagynochthonius*) (Pseudoscorpiones, Chthoniidae) des grottes de Sarawak (Malaysia). Archs.Sci.Genève, 41(3): 383-386.
- 1989a
 -- Les pseudoscorpions (Pseudoscorpiones, Arachnida) récoltés pendant la campagne biospéologique 1987 à Minorque. Endins, 14-15: 85-87.

- 1989b
 -- Les Pseudoscorpions (Arachnida) des grottes des îles Canaries, avec description de deux espèces nouvelles du genre **Paraliochthonius** Beier. Mem. Biospeol., 16: 41-46.
 -- sous presse
 Deux espèces nouvelles du genre **Pseudoblothrus** Beier, 1931 (Pseudoscorpiones, Syarinidae) des Açores (Portugal).
 , Adis, J. 1986
 -- On the occurrence and habitat of Pseudoscorpions (Arachnida) from Amazonian forests of Brazil. Stud. neotrop. Fauna Environm., 20(4): 211-215.
 , Adis, J., Buhrnheim, P.F. 1986
 -- Key to the families of Amazonian Pseudoscorpions (Arachnida). Amazoniana, 10(1): 21-40. [In English, German, and Portuguese]
 , Aguiar, N.O. 1986
 -- Wiederbeschreibung von **Neocheiridium corticum** (Balzan) und Beschreibung von zwei neuen Arten der Gattung aus Südamerika (Pseudoscorpiones, Cheiridiidae). Bull. Soc. ent. suisse, 59: 499-509.
 , Schuster, R. 1981
 -- **Pachyolpium atlanticum** n.sp., ein Pseudoskorpion aus der Gezeitenzone der Bermudas. Morphologie und Ökologie (Pseudoscorpiones: Olpiidae). Rev. suisse. Zool., 88(1): 265-273.
 Malcolm, D.R., Muchmore, W.B. 1985
 An unusual species of **Tyrannochthonius** from Florida (Pseudoscorpionida, Chthoniidae). J. Arachnol., 13(3): 403-405.
 Matthiesen, F.A., Hahn, N. 1981
Foresia em pseudoscorpiones brasileiros. Cienc. Cult., 33(5): 689-690.
 Meyer, E., Wager, H., Thaler, K. 1985
 Struktur und Jahreszeitliche Dynamik von **Neobisium**-Populationen in zwei Höhenstufen in Nordtirol (Österreich) (Arachnida, Pseudoscorpiones). Rev. Ecol. Biol. Sol., 22(2): 221-232.
 Morais, J.W., Adis, J., Mahnert, V. 1986
Abundancia e distribuição de Pseudoscorpiones do solo numa floresta neotropical não inundada. [Abstract] XIII Congr. brasil. Zool., Cuiaba-Mato Grosso, 2-7.II.1986: 258.
 Muchmore, W.B. 1980a
 A new species of **Apochthonius** with paedomorphic tendencies (Pseudoscorpionida, Chthoniidae). J. Arachnol., 8(1): 87-90.
 -- 1980b
 A new cavernicolous **Apochthonius** from California (Pseudoscorpionida, Chthoniidae). J. Arachnol., 8(1): 93-95.
 -- 1980c
Interchernes, a new genus of pseudoscorpion from Baja California (Pseudoscorpionida, Chernetidae). Southw. Nat., 25(1): 89-94.

- 1980d
 -- Pseudoscorpions from Florida and the Caribbean area.
 10. **New Mexobisium** species from Cuba.
 Fla.entomol., 63(1): 123-127.
- 1980e
 -- Three new **Olpiid** pseudoscorpions from California
 (Pseudoscorpionida, Olpiidae).
 Pan Pacif.Ent., 56(3): 161-169.
- 1980f
 -- An unusual new **Parachernes** from El Salvador
 (Pseudoscorpionida, Chernetidae).
 Trans.Am.Microsc.Soc., 99(2): 227-229.
- 1981a
 -- **Cavernicolous** species of **Larca**, **Archeolarca**, and
Pseudogarypus with notes on the genera (Pseudoscorpionida,
 Garypidae and Pseudogarypidae).
 J.Arachnol., 9(1): 47-60.
- 1981b
 -- Redescription of **Chthonius virginicus** Chamberlin
 (Pseudoscorpionida, Chthoniidae).
 J.Arachnol., 9(1): 110-112.
- 1981c
 -- **Cavernicolous** pseudoscorpions in **North and Middle America**.
 Proc.8th Int.Congr.Speleol., 1: 381-384.
- 1981d
 -- Pseudoscorpions from Florida and the Caribbean area.
 11. A new **Parachelifer** from the **Virgin Islands** (Cheliferidae).
 Fla.entomol., 64: 189-191.
- 1981e
 -- **New pseudoscorpion synonymies** (Pseudoscorpionida, Chernetidae
 and Cheliferidae).
 J.Arachnol., 9(3): 335-336.
- 1981f
 -- The **identity of Olpium minutum** Banks (Pseudoscorpionida,
 Olpiidae).
 J.Arachnol., 9(3): 337-338.
- 1982a
 -- A new **Rhinochernes** from **Ecuador** (Pseudoscorpionida,
 Chernetidae).
 J.Arachnol., 10(1): 87-88.
- 1982b
 -- The genera **Ideobisium** and **Ideoblothrus**, with remarks on the
 family **Syarinidae** (Pseudoscorpionida).
 J.Arachnol., 10(3): 193-221.
- 1982c
 -- Pseudoscorpionida.
 In: S.P.Parker ed., "Taxonomy and classification of living
 organisms", McGraw-Hill Book Co., New York : 96-102.
- 1982d
 -- Some new species of pseudoscorpions from caves in **Mexico**
 (Arachnida, Pseudoscorpionida).
 Assoc.Mex.Cave.Stud.Bull., 8: 63-78.

- 1982e
 --- A new cavernicolous **Sathrochthonius** from Australia
 (Pseudoscorpionida, Chthoniidae).
 Pacif.Ins., 24: 156-158.
- 1982f
 --- The genus **Anagarypus** (Pseudoscorpionida, Garypidae).
 Pacif.Ins., 24: 159-163.
- 1983a
 --- The cavernicolous fauna of Hawaiian Lava Tubes.
 XIV. A second troglobitic **Tyrannochthonius** (Pseudoscorpionida,
 Chthoniidae).
 Int.J.entom., 25(1): 84-86.
- 1983b
 --- The pseudoscorpions described by R.V.Chamberlin
 (Pseudoscorpionida, Olpiidae and Chernetidae).
 J.Arachnol., 11(3): 353-362.
- 1984a
 --- **Troglobochica**, a new genus from Caves in Jamaica and
 redescription of the genus **Bochica** Chamberlin
 (Pseudoscorpionida, Bochicidae).
 J.Arachnol., 12(1): 61-68.
- 1984b
 --- Further data on **Mucrochernes hirsutus** (Banks)
 (Pseudoscorpionida, Chernetidae).
 Pan Pacif.entom., 60(1): 20-22.
- 1984c
 --- Pseudoscorpions from Florida and the Caribbean area.
 12. **Antillochernes** a new genus with setae on the pleural
 membranes (Chernetidae).
 Fla.entomol., 67(1): 106-118.
- 1984d
 --- Pseudoscorpions from Florida and the Caribbean area.
 13. New species of **Tyrannochthonius** and **Paraliochthonius** from
 the **Bahamas** with discussion of the genera (Chthoniidae).
 Fla.entomol., 67(1): 119-126.
- 1984e
 --- New cavernicolous pseudoscorpions from California
 (Pseudoscorpionida, Chthoniidae and Garypidae).
 J.Arachnol., 12(2): 171-175.
- 1986a
 --- Additional pseudoscorpions, mostly from caves in Mexico
 and Texas (Arachnida, Pseudoscorpionida).
 Texas Mem.Mus., Speleol.Monogr., 1: 17-30.
- 1986b
 --- Redefinition of the genus **Olpiolum** and description of a new
 genus **Banksolpium** (Pseudoscorpionida, Olpiidae).
 J.Arachnol., 14(1): 83-92.
- 1989a
 --- A **Sathrochthonius** north of the equator (Pseudoscorpionida,
 Chthoniidae).
 J.Arachnol., 17(2): 251-253.

- 1989b
- A third **cavernicolous *Tyrannochthonius*** from **Hawaii** (Pseudoscorpionida, Chthoniidae).
Pan-Pacific Entomol., 65(4): 440-442.
- sous presse
- A pseudoscorpion from **arctic Canada** (Pseudoscorpionida, **Chernetidae**).
Can. J. Zool.
- sous presse
- ***Termitowithius kistneri***, a new genus and species of **termitophilous** pseudoscorpion from **Tanzania** (Pseudoscorpionida, Withiidae).
Bull. Br. arachnol. Soc.
- , Hentschel, E. 1982
- ***Epichernes aztecus***, a new genus and species of pseudoscorpion from **Mexico** (Pseudoscorpionida, Chernetidae).
J. Arachnol., 10(1): 41-45.
- Murthy, V.A., Venkataramanan, R. 1985
- Contribution to the **biology** of the pseudoscorpion, ***Ellingsenius indicus*** Chamberlin.
Indian Bee J., 47(1-4): 34-35.
- , 1988
- ***Ellingsenius indicus*** (Arachnida : Chelonethi) as a tool to the assessment of the settling nature of **honey bee** (***Apis cerana indica***) colony, in a new habitat.
Indian Bee J., 48(1-4) 1986: 54-55.

N

- Nelson, Jr., S. 1982
- The external **morphology** and life history of the pseudoscorpion ***Microbisium confusum*** Hoff.
J. Arachnol., 10: 261-274.
- 1984
- The genus ***Microbisium*** in **North and Central America** (Pseudoscorpionida, Neobisiidae).
J. Arachnol., 12(3): 341-350.

P

- Parker, J.R. 1982
- Arachnological History: What's in a **name?** - Scorpions and Pseudoscorpions.
Newsl. Br. arachnol. Soc., 34: 1-2.
- Patel, B.H., Kareemullah, M. 1989
- Effect of **temperature** on two species of pseudoscorpions (Arachnida : Pseudoscorpionida).
Abstr. XI Int. Congr. Arachnol. Turku, Finland 7-12 August 1989.
Rep. Dept. Biol. Univ. Turku, 19: 74.
- Pieper, H. 1980
- Neue Pseudoskorpion-Funde auf den **Ilhas Selvagens** und Bemerkungen zur Zoogeographie dieser Insel Gruppe.
Vieraea, 8(2): 261-270.
- 1981
- Die Pseudoskorpione von **Madeira** und Nachbarinseln.
Bocagiana, 60: 1-7.

- Poinar, Jr., G.O., Thomas, G.M., Lee, V.F. 1985
Laboratory infection of Garypus californicus
(Pseudoscorpionida, Garypidae) with neoaplectanid
and heterorhabditid nematodes (Rhabditoidea).
J.Arachnol., 13(3): 400-402.

R

- Rafalski, J. sous presse
Kosarze (Opiliones); Zaleszczotki (Pseudoscorpionida).
In: K.Kasprzyk, W.Niedbała eds.: "Metody hodowli Zwierząt
glebowych".
- Rapp, W.F. 1986
Pseudoscorpion population in oak-hickory woodlands.
Proc.9.int.arachnol.Congr., Panama, VIII.1983: 219-221.
- , Rapp, J.L.C. 1989
A comparison of two pseudoscorpion populations
(Arachnida : Pseudoscorpiones).
Abstr.XI Int.Congr.Arachnol. Turku, Finland 7-12 August 1989.
Rep.Dept.Biol.Univ.Turku, 19: 84.
- Rey, J.R., McCoy, E.D. 1983
Terrestrial arthropods of northwest Florida salt marshes :
Araneae and Pseudoscorpions (Arachnida)
Fla.entomol., 66(4): 497-502.
- Ribera, C. 1986
Els Aracnids (Escorpins, Pseudoscorpins, Araneids, Els grups
exotics : uropigis, esquizomids, amblipigis, ricinulis).
Hist.Nat.dels Paisos Catalans, 9. Artropodes I.
Enciclopèdia Catalana. Barcelona : 102-108, 138-158.

S

- Sacher, P. 1987
Neobisium crassifemoratum (Beier, 1928) in der polnischen
Tatra (Arachnida, Pseudoscorpiones).
Polskie Pismo Entomol., (Wroclaw): 57-213.
- , Breinl, K. 1986
Über Nachweise von Pseudoskorpione in Ostthuringen
(Arachnida, Pseudoscorpiones).
Abh.Ber.Mus.Nat.Gotha, 13: 49-50.
- Sanocka-Woloszyn, E. 1981
Badania pajęczaków (Aranei, Opiliones, Pseudoscorpionida)
jaskiń Wyzyny Krakowsko-Czestochowskiej.
Acta.Univ.Wratisl., 548: Prac.Zool., Wroclaw, (11): 1-90.
- Sato, H. 1980a
Altitudinal distribution of soil pseudoscorpions on Yakushima
island.
Edaphologia, 20: 13-18.
- 1980b
Influence of humidity on three pseudoscorpions Microcreagris
japonica, Garypus japonicus and Haplochernes boncicus.
Mem.Educ.Inst.priv.Sch., 72: 57-63.

- 1980c
 - **Life history of arboreal pseudoscorpion Apocheiridium pinium** based on the investigation of the nests and exuviae.
Mem.Educ.Inst.priv.Sch., 72: 65-71.
- 1982
 - **A new species of the genus Dactylochelifer** (Pseudoscorpionidea, Cheliferidae) from Japan.
Acta.Arachnol., 30(2): 105-110.
- 1983
 - **Altitudinal distribution of soil pseudoscorpions at Mt. Fuji.**
Edaphologia, 28: 13-22.
- 1984
 - **Study on life history of pseudoscorpions, with special references to the brooding and the number of moulting.**
Atypus, 85: 75-89.
- 1985
 - **Altitudinal distribution of soil pseudoscorpions at Mt.Funagata Yamagata Prefecture.**
Bull.biogeogr.Soc.Japan, 40(1-10): 21-24. [In Japanese]
- 1987
 - **Soil pseudoscorpions in the cool temperate forests of Japan. The temperate forest ecosystem. ITE symposium no.20. Proceeding of international Symposium on Temperate Forest Ecosystem Management and Environmental Protection: 94-96.**
- 1988
 - **Seasonal fluctuation of some pseudoscorpions in Yokohama, central Japan.**
Edaphologia, 38: 11-16. [In Japanese]
- Schawaller, W. 1980a
 - Erstnachweis tertiärer Pseudoskorpione (Chernetidae) in **Dominikanischem Bernstein** (Stuttgarter Bernsteinsammlung : Arachnida, Pseudoscorpionidea).
Stuttgarter Beitr.Naturk., B, 57: 1-20.
- 1980b
 - **Eine Pseudoskorpion-Art Neobisium erythroductylum L.Koch, 1873 in Süddeutschland aktiv auf Schnee** (Arachnida : Pseudoscorpiones : Neobisiidae).
Ent.Zeitsch., 90: 54-56.
- 1980c
 - **Fossile Chthoniidae in Dominikanischem Bernstein, mit phylogenetischen Anmerkungen** (Stuttgarter Bernsteinsammlung : Arachnida, Pseudoscorpionidea).
Stuttgarter Beitr.Naturk., B, 63: 1-19.
- 1980d
 - **Bibliographie der rezenten und fossilen Pseudoscorpionidea 1890-1979 (Arachnida).**
Stuttgarter Beitr.Naturk., A, 338: 1-61.
- 1981a
 - **Pseudoskorpione (Cheliferidae) phoretisch auf Käfern (Platypodidae) in Dominikanischem Bernstein** (Stuttgarter Bernsteinsammlung : Pseudoscorpionidea und Coleoptera).
Stuttgarter Beitr.Naturk., B, 71: 1-17.



- 1981b
 -- Eine neue troglobionte **Roncus**-Art und weitere Pseudoskorpione von den Nördlichen Sporaden (**Ägäis**) (Arachnida : Pseudoscorpionidea).
 Stuttgarter Beitr.Naturk., A, 344: 1-9.
- 1981c
 -- **Cheiridiidae** in **Dominikanischem Bernstein**, mit Anmerkungen zur morphologischen Variabilität (Stuttgarter Bernsteinsammlung : Arachnida, Pseudoscorpionidea).
 Stuttgarter Beitr.Naturk., B, 75: 1-14.
- 1981d
 -- Pseudoskorpione von **Korsika** (Arachnida, Pseudoscorpionidea).
 Ent.Basiliensia, 6: 42-51.
- 1982a
 -- Eine neue höhlenbewohnende **Chthonius**-Art aus den italienischen Südalpen (Arachnida, Pseudoscorpionidea).
 Boll.Soc.ent.Ital., 114: 49-55.
- 1982b
 -- Der erste Pseudoskorpion (**Chernetidae**) aus **Mexikanischem Bernstein** (Stuttgarter Bernsteinsammlung : Arachnida, Pseudoscorpionidea).
 Stuttgarter Beitr.Naturk., B, 85: 1-9.
- 1982c
 -- Eine für **Deutschland** neue Pseudoskorpion-Art aus dem Allgäu (Arachnida).
 Jh.Ges.Naturk.Württ., 137: 159-160.
- 1983a
 -- **Neue Pseudoskorpion-Funde** aus dem **Nepal-Himalaya** (Arachnida : Pseudoscorpionidea).
 Senckenbergiana biol., 63(1/2): 105-111.
- 1983b
 -- Pseudoskorpione aus dem Norden des **Iran**.
 Senckenbergiana biol., 63: 367-371.
- 1983c
 -- Pseudoskorpione aus dem **Kaukasus** (Arachnida).
 Stuttgarter Beitr.Naturk., A, 362: 1-24.
- 1985a
 -- Pseudoskorpione aus der **Sowjetunion** (Arachnida : Pseudoscorpiones).
 Stuttgarter Beitr.Naturk., A, 385: 1-12.
- 1985b
 -- Liste **griechischer Neobisilidae** mit neuen Höhlenfunden im Epirus, auf Samos und Kreta (Arachnida : Pseudoscorpiones).
 Stuttgarter Beitr.Naturk., A, 386: 1-8.
- 1986
 -- Pseudoskorpione aus der **Sowjetunion**, Teil 2 (Arachnida : Pseudoscorpiones).
 Stuttgarter Beitr.Naturk., A, 396: 1-15.
- 1987a
 -- Eine neue **Dactylochelifer**-Art aus **Spanien** (Prov. Tarragona) (Pseudoscorpiones).
 Eos, 63: 277-280.

- 1987b
 -- Erstnachweis der Familie **Syarinidae** in Deutschland: Ein Relikt-vorkommen von **Syarinus strandi** im Oberen Donautal (Arachnida : Pseudoscorpiones).
 Jh.Ges.Naturk.Württ., 142: 287-292.
- 1987c
 -- Neue Pseudoskorpion-Funde aus dem **Nepal-Himalaya**, II. (Arachnida : Pseudoscorpiones).
 Senckenbergiana biol., 68(1/3): 199-221.
- 1988
 -- Neue Pseudoskorpion-Funde aus dem **Kashmir-Himalaya** (Arachnida : Pseudoscorpiones).
 Ann.Naturhist.Mus.Wien, 90 B: 157-162.
- 1989a
 -- Zwei neue höhlenbewohnende **Chthonius**-Arten (Arachnida : Pseudoscorpiones) von den **Griechischen** Inseln Santorin und Chios.
 Ann.Musei Goulandris 8.
- 1989b
 -- Pseudoskorpione aus der **Sowjetunion**, Teil 3 (Arachnida : Pseudoscorpiones).
 Stuttgarter Beitr.Naturk., A, 440: 1-30.
 , Dashdamirov, S. 1988
- Pseudoskorpione aus dem **Kaukasus**, Teil 2 (Arachnida).
 Stuttgarter Beitr.Naturk., A, 415: 1-51.
- Schmalfuss, H., Schawaller, W. 1984
 Die Fauna der **Ägäis**-Insel Santorin. Teil 5
 Arachnida und Crustacea.
 Stuttgarter Beitr.Naturk., A, 371: 1-16.
- Schuster, R. 1986
 Comment on the proposed designation of type species of **Olpium** Koch, 1873 (Arachnida, Pseudoscorpionida) Z.N.(S.) 2484.
 Bull.Zool.Nomencl., 43(2): 118.
- Shear, W.A. 1986
 A fossil fauna of early terrestrial arthropods from the Givetian (Upper Middle **Devonian**) of Gilboa, New York, USA.
 Actas X Congr.Int.Arachnol., Jaca, España, 1:387-392.
 , Schawaller, W., Bonamo, P.M. 1989
- Record of **Palaeozoic** Pseudoscorpions.
 Nature, 341(6242): 527-529.
- , Selden, P.A., Rolfe, W.D.I., Bonamo, P.M., Grierson, J.D. 1987
 New fossil arachnids from the **Devonian** of Gilboa, **New York**.
 Amer.Mus.Novit., 2901: 1-74.
- Sivaraman, S. 1980a
 Two species of pseudoscorpions from South **India** (Pseudoscorpionida : Heterosphyronida).
 Entomon., 5(3): 237-241.
- 1980b
 -- Pseudoscorpions from South **India** : a new genus and some new species of the superfamily **Garypoidea** Chamberlin (Pseudoscorpionida : Diplosphyronida).
 Orient.Insects, 14(3): 325-343.



- 1980c
Pseudoscorpions from South **India** : some new species of the family **Atemnidae** Chamberlin (Pseudoscorpionida : Monosphyronida).
Orient.Insects, 14(3): 345-362.
- 1981a
Systematics of some South **Indian Sternophorid** Pseudoscorpions (Pseudoscorpionida, Monosphyronida).
Rev.suisse Zool., 88: 313-325.
- 1981b
Changes in the functional response and prey predator interaction of pseudoscorpions.
Amer.Arachnol., 24: 22. [Abstract]

T

- Tenorio, J.M., Muchmore, W.B. 1982
Catalogue of entomological types in Bishop Museum.
Pseudoscorpionida.
Pacif.Ins., 24(3/4): 377-385.
- Thaler, K. 1981
Neue Arachniden-Funde in der nivalen Stufe der Zentralalpen Nordtirols (**Österreich**) (Aranei, Opiliones, Pseudoscorpiones).
Ber.nat.-med.Ver., Innsbruck, 68: 99-105.
- Troiano, G. sous presse
The **caryotype** and male **meiosis** of four species of the genus **Roncus** L.Koch, 1873 (Pseudoscorpionida : Neobisiidae).
Boll.Zool.

V

- Vitali-di Castri, V. 1984
Chthoniidae et **Cheiridiidae** (Pseudoscorpionida, Arachnida) des Petites Antilles.
Bull.Mus.natl.Hist.nat.Paris, 4e serie, 5, sect.A, 4: 1059-1078

W

- Werner, G., Bawa, S.R. 1988a
Acrosome formation in the pseudoscorpion **Diplotemnus** sp.
J.Ultrastruct.Mol.Struct.Res., 98(2): 105-118.
- 1988b
Spermatogenesis in the pseudoscorpion **Diplotemnus** sp. with special reference to nuclear changes.
J.Ultrastruct.Mol.Struct.Res., 98(2): 119-136.

Z

- Zaragoza Miralles, J.A. 1984
Un nuevo **Chthonius cavernicola** de la Provincia de **Alicante** (Arachnida, Pseudoscorpionidea, Chthoniidae).
Mediterranea, ser.Biol., 7: 49-54.
- 1985a
Nuevos o interesantes Chthoniidae cavernícolas del Pais Valenciano (Arachnida, Pseudoscorpiones).
Misc.Zool., 9: 145-158.

- 1985b
 --- **Chthonius (Ehippichthonius) verai**, nueva especie cavernicola del sureste **español** (Arachnida, Pseudoscorpiones, Chthoniidae). Mediterranea, ser. Biol., 8: 5-15.
- 1986
 --- Distribucion de los Pseudoscorpiones cavernícolas de la **península Iberica** e islas Baleares (Arachnida). Actas X Congr. Int. Aracnol. Jaca, España. 1: 405-411.
- sous presse
 --- Pseudoscorpiones cavernícolas de **Asturias, Cantabria y Pais Vasco** (Arachnida). Speleon.
- sous presse
 --- Fauna cavernicola de **Catalunya**. Pseudoscorpions (Arachnida). Speleon.
- sous presse
 --- Pseudoscorpiones. Guia de practicas de Artropodos. Pub. Sociedad Española de Entomologia
- sous presse
 --- Fauna cavernicola de la provincia de **Alicante**. Pub. Inst. Est. Juan Gil-Albert.
- Zeh, D.W. 1987a
 --- **Aggression, density and sexual dimorphism** in Chernethid pseudoscorpions (Arachnida, Pseudoscorpionida). Evolution, 41(5): 1072.
- 1987b
 --- **Life history consequences of sexual dimorphism** in a Chernethid pseudoscorpion. Ecology, 68(5): 1495-1501.

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Volume 2

Part 3

September, 1991

Cairo , Egypt

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The Revd. O. Pickard-Cambridge in Egypt

John R. Parker
Stone Raise, 42, Lakeland Park, Keswick,
Cumbria, CA12 4AT England, U.K.

Octavius Pickard-Cambridge was born on 3rd December 1828 in the small village of Bloxworth in the English county of Dorset and after entering University College at Durham in 1855 was ordained priest in 1858. Both his grand-father and father had been rectors in succession at Bloxworth village church and when the latter died in 1869 Octavius Pickard-Cambridge succeeded him. All three served the church from 1780 to 1917.

The life of Pickard-Cambridge was one of varied interests. In addition to the deep interest in his parish; he gained an expert knowledge of music, poetry, gardening and antiquities as well as natural history in which he became an eminent authority who specialised in the arachnid Orders: Araneae, Opilionida and Pseudoscorpionida. He published monographs on the British species and 139 papers during his long life. It was not long before this interest spread to wider regions of the world and from 1869 onwards he was receiving species from Ceylon, St. Helena, Paraguay, Africa, China, Palestine, Syria, Siberia, New Zealand, the Seychelles Islands, Switzerland, India, Arctica and North and Central America. All these provided for descriptive and faunistic papers.

During the period he served as a curate at Bloxworth under his father there came an opportunity to travel abroad for the first time and in 1863 he travelled with his companion Mr. O. Bradshaw across France and sailed from Marseilles for Egypt on January 5th. After a very bad sea passage lasting 9 days they arrived at Alexandria where, by previous arrangement, they were joined by another Englishman, Henry Rogers. Alexandria was then very much a different place than it is today. Pickard-Cambridge briefly recorded his impressions in his diary and these were far from favourable: "Took a look around the place - everywhere stinking like an exaggerated ferret-box, and the noise of the watchmen at night defies description". On January 15th they left Alexandria for Cairo: "Luggage on truck with Rogers hanging on behind - worth something to look at! Roads awful, nearly capsized half-a-dozen times. Run through the Delta very enjoyable: lots of ducks, snipe, plovers, hawks, herons, egrets and kingfishers". After 7 hours they arrived at Cairo where they went to see the Sphinx and

the Pyramids, riding there on donkeys. "Went full split most of the way, with the donkey boys after us shouting like demons, just like Bedlam let loose! Pyramids worth seeing from their size, but the mode of doing it, getting very cockneyish. Found some good spiders under stones, but not many".

On the 28th they started on a trip up the River Nile, which in spite of many delays due to lack of wind, brought them much enjoyment and plenty of good shooting and records of birds shot or seen.

On Sundays, Pickard-Cambridge regularly held a Christian service on the boat as there was no English chaplain. They went upstream as far as Aswan and visited the antiquities en route at Tel el-Amarna, Luxor, Karnak and Philae. The return journey started on March 4th, stopping day by day for shooting and sightseeing, and arrived back in Cairo on the 29th.

On April 11th: "Rogers sailed in the Ellora for England with all the baggage - birds, reptiles, fishes and insects etc. - about 8 cwt" (406 kilos!). Pickard-Cambridge and Bradshaw remained in Cairo until April 29th when they sailed for Corfu and toured Europe for 6 months before returning to London at the end of October.

The list of birds shot or observed in Egypt includes 176 species and 139 of these brought home as specimens. At that time there was no feeling for conservation and the indiscriminate shooting of birds, especially rare birds, was all part of the enjoyment, not only in Egypt, but everywhere else!

In January 1865 Pickard-Cambridge and Bradshaw again left home for the Continent and toured France and Italy. At Naples they sailed for Alexandria where they arrived on March 6th and stayed for 8 days before sailing to Jaffa for a two months' tour in Palestine and Syria returning by way of Greece, Italy and Austria, then to Holland and Belgium arriving in London on the 13th December.

Pickard-Cambridge died on the 3rd March 1917 at the age of 89 and by then had described as new to science some 100 spider species found in Britain. He was elected a Fellow of the Zoological Society of London in 1870 and a Fellow of the Royal Society in 1887. Apart from a few of his published papers on the behaviour of British birds and mammals, all his work was concerned with the description and classification of arachnids which he either collected himself or were sent to him by other collectors.

For about eleven weeks between the middle of January and the middle of April 1864; Pickard-Cambridge collected 164 spider species in Egypt between Alexandria and Aswan (Pickard-Cambridge, 1876). Mr. Hisham El-Hennawy kindly provided me with a copy of Pickard-Cambridge's paper which not only lists these but also includes some described and recorded by other authors which, at that time, brought the total described for Egypt up to 226 species. In the list which follows Mr. El-Hennawy has added the modern names to those which proved to be synonyms or brought about by changes in the taxonomy in more recent times. No less than 85 of those collected by Pickard-Cambridge were new to science and carry the authoritative specific name provided by Octavius Pickard-Cambridge and includes his genus Nilus which he created as an addition to the Family Pisauridae to accommodate Nilus curtus, a swamp spider allied to the genus Dolomedes.

References

- Parker, J.R. 1977
The European journeys of the Revd. Pickard-Cambridge F.R.S.
Newsl.Br.arachnol.Soc., 19: 1-2.
- Pickard-Cambridge, A.W. 1918
Memoir of the Reverend Octavius Pickard-Cambridge.
(Privately published) Oxford.
- Pickard-Cambridge, O. 1876
Catalogue of a collection of spiders made in Egypt, with
descriptions of new species and characters of a new genus.
Proc.Zool.Soc.Lond., 1876, pp.541-630, pls.58-60.
- 1905
Notes on collecting in Egypt.
Ent.Rec., XVII, pp.210-211.
- Savory, T.H. 1961
Spiders, Men and Scorpions.
University of London Press.

**List of Species described and recorded from Egypt
by Cambridge, 1876**

Family Filistatidae

Filistata testacea Latreille p.543 = F. insidiatrix (Forskål, 1775)
F. _____ puta sp.n. p.544 = F. insidiatrix (Forskål, 1775)

Family Oecobiidae

Oecobius putus sp.n. p.544
O. _____ templi sp.n. p.545
O. _____ annulipes Lucas p.546

Family Urocteidae

Uroctea limbata C.Koch p.546

Family Segestriidae

Ariadne insidiatrix Savigny p.547 = Ariadna insidiatrix Savigny, 1825

Family Dysderidae

Dysdera lata Reuss p.547

Family Oonopidae

Oonops scutatus sp.n. p.547 = Dysderina scutata (Cambridge, 1876)
O. _____ pauper sp.n. p.549 = Sulsula paupera (Cambridge, 1876)

Family Gnaphosidae

Gnaphosa plumalis Cambr. p.550 = Berlandina plumalis (Cambridge, 1872)
G. _____ conspersa Cambr. p.550 = Pterotricha conspersa
 (Cambridge, 1872)
G. _____ procera Cambr. p.550 = Pterotricha procera (Cambridge, 1874)
G. _____ marginata Cambr. p.551 = Nomisio marginata (Cambridge, 1874)
G. _____ venatrix Cambr. p.551 = Berlandina venatrix (Cambridge, 1874)
Drassus mundulus Cambr. p.551 = Scotophaeus mundulus (Cambridge, 1872)
D. _____ senilis Cambr. p.551 = Scotophaeus senilis (Cambridge, 1872)
D. _____ infumatus Cambr. p.551 = Drassodes infumatus (Cambridge, 1872)
D. _____ ornatus Cambr. p.551 = Talanites ornatus (Cambridge, 1874)
D. _____ campestratus Cambr. p.551 = Poecilochroa campestrata
 (Cambridge, 1874)
D. _____ alexandrinus Cambr. p.551 = Drassodes alexandrinus
 (Cambridge, 1874)
D. _____ aegyptius Cambr. p.552 = Drassodes aegyptius (Cambridge, 1874)
D. _____ vulpinus Cambr. p.552 = Scotophaeus vulpinus (Cambridge, 1874)
D. _____ denotatus Cambr. p.552 = Drassodes denotatus (Cambridge, 1874)
D. _____ pugnax Cambr. p.552 = Poecilochroa pugnax (Cambridge, 1874)
Prosthesima laeta Cambr. p.552 = Zelotes laetus (Cambridge, 1872)
P. _____ picina Cambr. p.552 = Zelotes picinus (Cambridge, 1872)
P. _____ tristicula Cambr. p.552 = Zelotes tristiculus
 (Cambridge, 1874)
P. _____ curina Cambr. p.552 = Zelotes curinus (Cambridge, 1874)
P. _____ nilicola Cambr. p.552 = Zelotes nilicola (Cambridge, 1874)
P. _____ mollis Cambr. p.553 = Echemus mollis (Cambridge, 1874)
P. _____ pallida Cambr. p.553 = Zelotes tenuis (L.Koch, 1866)
P. _____ inaurata Cambr. p.553 = Zelotes inauratus (Cambridge, 1872)
Micaria cincta L.Koch p.553 = Aphantaulax cincta (L.Koch, 1866)

Family Clubionidae

- Cheiracanthium dubium Cambr. p.553
C. equestre Cambr. p.553
C. isiacum Cambr. p.553
C. annulipes Cambr. p.553

Family Liocranidae

- Cheiracanthium tenuissimum L.Koch p.553 = Mesiotelus tenuissimus
(L.Koch, 1866)

Family Palpimanidae

- Palpimanus haematinus C.Koch p.554 = P. gibbulus Dufour, 1820
P. savignyi Sav. p.554 = P. gibbulus Dufour, 1820

Family Bresidae

- Eresus petagnae Sav. p.554 = Eresus petagnae Audouin, 1825
E. dufourii Sav. p.554 = Stegodyphus dufouri (Audouin, 1825)

Family Dictynidae

- Dictyna innocens Cambr. p.555
D. conducens sp.n. p.556
D. conducta sp.n. p.556

Family Titanoecidae

- Titanoeca distincta Cambr. p.557 = T. albomaculata (Lucas, 1846)

Family Agelenidae

- Agelena lepida sp.n. p.558
Tegenaria proxima Cambr. p.559 = T. pagana C.L.Koch, 1841
Textrix coarctata Duf. p.559 = Lycosoides coarctata (Dufour, 1831)

Family Zodariidae

- Enyo nitida Sav. p.559 = Zodarion nitidum (Savigny, 1825)
E. expers sp.n. p.560 = Zodarion expers (Cambridge, 1876)

Family Hersiliidae

- Hersilia caudata Savigny (var. diversa Cambr.) p.560
Hersilidia lucasii sp.n. p.562 = Hersiliola lucasi (Cambridge, 1876)

Family Loxoscelidae

- Loxoscelis rufescens Duf. p.564 = Loxosceles rufescens (Dufour, 1820)

Family Scytodidae

- Scytodes thoracica Walck. p.564 = S.t. Latreille, 1804
S. kochii sp.n. p.564 = S. velutina Heineken & Lowe, 1835

Family Pholcidae

- Pholcus semicaudatus sp.n. p.565 = Crossopriza semicaudata
(Cambridge, 1876)
P. rivulatus Sav. p.566 = Holocnemus pluchii (Scopoli, 1763)

Family Theridiidae

Latrodectus erebus Sav. p.567 = L. tredecimguttatus (Rossi, 1790)
Lithyphantes hamatus Koch p.568 = Steatoda paykulliana (Walckenaer, 1805)

Steatoda signata sp.n. p.568 = S. erigoniformis (Cambridge, 1872)
Steatoda? mandibulare Luc. p.568 = Enoplognatha mandibularis (Lucas, 1846)

Euryopsis acuminata Luc. p.569

E. scripta Cambr. p.569 = E. acuminata (Lucas, 1846)

E. quadrifasciata sp.n. p.569 = E. acuminata (Lucas, 1846)

Theridion rufolineatum Luc. p.569 = Anelosimus aulicus (C.L. Koch, 1838)

T. varians Koch p.570 = T. v. Hahn, 1831

T. spinitarsis sp.n. p.570 = T. spinitarse Cambridge, 1876

T. melanostictum sp.n. p.570

Family Mimetidae

Mimetus monticolus Bl. p.571 = M. monticola (Blackwall, 1870)

Family Linyphiidae

Erigone spinosa Cambr. p.572 = Prinerigone vagans (Savigny, 1825)

E. alexandrina Cambr. p.572 = Tapinocyba alexandrina (Cambridge, 1872)

Linyphia extricata sp.n. p.572 = Bathyphantes extricatus (Cambridge, 1876)

Family Tetragnathidae

Pachygnatha argyrostilba sp.n. p.573 = Dyschiriognatha argyrostilba (Cambridge, 1876)

Tetragnatha molesta Cambr. p.574 = T. nitens (Savigny, 1825)

T. nitens Savigny p.574

T. flava Savigny p.574

T. filiformis Savigny p.575

T. pelusia Sav. p.575 = T. nitens (Savigny, 1825)

Family Araneidae

Singa affinis sp.n. p.575 = Hypsosinga albobittata (Westring, 1851)

S. lucina Savigny p.575

Argiope aurelia Sav. p.576 = Argiope trifasciata (Forskål, 1775)

A. sticticalis sp.n. p.576 = Argiope trifasciata (Forskål, 1775)

Cyrtophora opuntiae Duf. p.576 = C. citricola (Forskål, 1775)

Epeira chloris Sav. p.576 = Larinia chloris (Savigny, 1825)

E. susplicax sp.n. p.577 = Araneus susplicax (Cambridge, 1876)

E. perplicata Cambr. p.577 = Araneus perplicata (Cambridge, 1872)

E. circe Sav. p.577 = Araneus circe (Savigny, 1825)

E. dromedaria Walck. p.577 = Araneus bituberculata Walckenaer, 1802

E. atomaria sp.n. p.577 = Siwa atomaria (Cambridge, 1876)

Family Uloboridae

Uloborus signatus sp.n. p.579 = U. plumipes Lucas, 1846

Family Thomisidae

- Thomisus lateralis C.Koch p.580 = Runcinia lateralis (C.L.Koch, 1838)
T. spinifer Cambr. p.580
Diaea diana Sav. p.580 = Synema diana (Audouin, 1825)
D. candicans sp.n. p.580 = Synema candicans (Cambridge, 1876)
Xysticus hirtus Sav. p.581 = X. bliteus (Simon, 1875)
X. promiscuus sp.n. p.581 = X. cristatus (Clerck, 1757)
X. ferus sp.n. p.583
X. peccans sp.n. p.584
X. subclavatus sp.n. p.584 = Ozyptila subclavata (Cambridge, 1876)

Family Selenopidae

- Selenops aegyptiacus Sav. p.585 = S. radiatus Latreille, 1819

Family Heteropodidae

- Sparassus walckenaerius Sav. p.587 = Eusparassus walckenaerii (Audouin, 1825)
S. cognatus sp.n. p.588 = Eusparassus cognatus (Cambridge, 1876)
S. suavis sp.n. p.588 = Eusparassus suavis (Cambridge, 1876)

Family Philodromidae

- Artanes bigibba sp.n. p.590 = Philodromus bigibbus (Cambridge, 1876)
A. lugens sp.n. p.591 = Philodromus lugens (Cambridge, 1876)
Thanatus albinus Sav. p.591 = T.a. (Audouin, 1825)
T. lineatipes sp.n. p.591 = Tibellus lesserti Roewer, 1951
T. flavus sp.n. p.592
T. flavescens sp.n. p.592
Philodromus adjacens sp.n. p.592 = Thanatus fabricii (Audouin, 1825)
P. medius Cambr. p.594 = P. glaucinus Simon, 1870
P. cinereus sp.n. p.494
P. venustus sp.n. p.595

Family Pisauridae

- Nilus (gen. nov.) curtus sp.n. p.596

Family Lycosidae

- Pirata leopardus Sund. p.598 = Arctosa leopardus (Sundevall, 1832)
P. proxima sp.n. p.598
Trochosa partita sp.n. p.599 = Hippasa partita (Cambridge, 1876)
T. depuncta sp.n. p.600 = Arctosa depuncta (Cambridge, 1876)
T. pilipes Luc. p.600 = Arctosa cinerea (Fabricius, 1776)
T. virulenta sp.n. p.600 = Crocodilosa virulenta (Cambridge, 1876)
T. urbana sp.n. p.601 = Geolycosa urbana (Cambridge, 1876)
T. effera Cambr. p.601 = Hyaenosa effera (Cambridge, 1872)
Tarentula tarentulina Sav. p.601 = Allocosa tarentulina (Savigny, 1825)
T. truculenta sp.n. p.601 = Lycosa truculenta (Cambridge, 1876)
T. tremens sp.n. p.602 = Allocosa tremens (Cambridge, 1876)
Lycosa ungulata sp.n. p.603 = Evippa ungulata (Cambridge, 1876)
L. fidelis Cambr. p.604 = Wadicosa venatrix (Lucas, 1846)
L. injudunda sp.n. p.605 = Pardosa injudunda (Cambridge, 1876)
L. iniqua sp.n. p.605 = Pardosa iniqua (Cambridge, 1876)
L. inquieta sp.n. p.606 = Pardosa inquieta (Cambridge, 1876)
L. inopina sp.n. p.607 = Pardosa inopina (Cambridge, 1876)
L. observans sp.n. p.608 = Pardosa observans (Cambridge, 1876)

Family **Oxyopidae**

Oxyopes alexandrinus Sav. p.609 = O. heterophthalmus (Latreille, 1804)
O. bilineatus sp.n. p.609

Family **Salticidae**

Ballus piger sp.n. p.609

Attus delectus Cambr. p.610 = Heliophanus edentulus Simon, 1871

A. mouffettii Sav. p.610 ?

A. staintonii Cambr. p.610 = Hycitia staintonii (Cambridge, 1872)

A. spiniger Cambr. p.610 = Pseudicius spiniger (Cambridge, 1872)

A. paykullii Sav. p.610 = Plexippus paykullii (Audouin, 1825)

A. soldanii Sav. p.611 = Menemerus soldanii (Audouin, 1825)

A. monardi Luc. p.611 = Aelurillus monardi (Lucas, 1846)

A. fulgens Cambr. p.611 = Icius fulgens (Cambridge, 1872)

A. regillus L. Koch p.611 = Thyene imperialis (Rossi, 1846)

A. bonnetii Sav. p.611 = Mogrus bonnetii (Audouin, 1825)

A. oculatus sp.n. p.612 = Neaetha oculata (Cambridge, 1876)

A. mendicus sp.n. p.614 ?

A. mendax sp.n. p.615 = Langona mendax (Cambridge, 1876)

A. effigies sp.n. p.616 = Langona redii (Audouin, 1825)

A. memorialis sp.n. p.617 = Phlegra memorialis (Cambridge, 1876)

A. memorabilis sp.n. p.618 = Mithion memorabilis (Cambridge, 1876)

Yllenus saliens sp.n. p.620

Plexippus adansonii Sav. p.622 = Hasarius adansonii (Audouin, 1825)

Menemerus vigoratus Koch p.622 = M. semilimbatus (Hahn, 1829)

M. heydenii Sim. p.622

M. animatus sp.n. p.622

M. interemptor sp.n. p.623

Epiblemum tricinctum C. Koch p.624 = Salticus tricinctus (C. Koch, 1846)

E. paludivagum Luc. p.624 = Salticus paludivagus Lucas, 1864

Heliophanus decoratus L. Koch p.624

Salticus todillus Sim. p.625 = Synageles dalmaticus (Keyserling, 1863)

S. repudiatus sp.n. p.625 = Synageles repudiatus (Cambridge, 1876)

Tarantulas of Egypt

(Araneida : Theraphosidae)

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Introduction

The following paper, on the three species of the genus *Chaetopelma* known from Egypt, is an abridged paper taken from my book "Baboon Spiders, A revision of the Theraphosidae family from Africa and the Middle East".

Bearing in mind that this paper specifically focusses on material which hails from Egypt, it will be subsequently necessary for those researchers who seek a more detailed description of the genus and its relationship with other genera of the *Ischnocolinae* subfamily to consult the pages of this primary work. It is intended that this first volume is the first part of a major three volume revision of the Theraphosidae family from both the Old and New Worlds.

Acknowledgments

I am indebted to Mr. Paul Hillyard, Curator of the Arachnological Collection of the British Museum of Natural History, for access to type material; to Mr. Dave Garthwaite for collecting specimens of *C. aegyptiacum*; to Mr. Hisham El-Hennawy for editing this paper, preparing a key to species and assisting in my research with invaluable specimens.

I would also like to thank Fitzgerald Publishing for giving me permission to use illustrations from "Baboon Spiders".

Abbreviations

PLE Posterior lateral eye
PME Posterior median eye
BMNH British Museum (Natural History), London
MNHP Muséum National d'Histoire Naturelle, Paris
SMF Senckenberg Museum, Frankfurt-am-Main
I/C Length of leg 1 / Length of carapace
IV/C Length of leg 4 / Length of carapace
Ref. Reference(s)

GENUS CHAETOPELMA Ausserer 1871

Ref. Ausserer 1871. Verh.zool.bot.Ges.Wien, 21: p.190.
 Simon 1892. Hist.Nat.Araign. 1(1): p.140.

Generic type: C.aegyptiacum

Remarks

The two primary genera of the subfamily Ischnocolinae: Ischnocolus and Chaetopelma, were formed in 1871 by Ausserer to house a number of specimens which had been despatched to him from Cyprus, Egypt, Spain and Italy (the Cypriot specimens, Chaetopelma aegyptiacum and Ischnocolus gracilis, were collected by Dr. Kotschy - no distribution data). It is interesting to note that Ausserer (1871) initially deemed Chaetopelma to be a subgenus of Ischnocolus, but both Simon (1892, p. 140) and Pocock (1897, p.742) had revised its status to a genus.

Hirst (1920) recorded that the Egyptian species of Chaetopelma is known as "aboushebat" by the local people who fear its bite and subsequently have a tendency to exaggerate its venom potential - beliefs which, I have discovered in my own travels, are common in Third World countries. Note it is likely that in hot countries, plagued with poor sanitary conditions, secondary infection linked to initial shock is the primary cause of fatalities.

Diagnosis

Chaetopelma differs from Ischnocolus by not having all the scopulae of the tarsal segments divided by setae. Ausserer (1871) and Pocock (1897) were incorrect in assuming that the tarsal scopulae of legs 1,2 are undivided by setae. In reality leg 1, is never divided by setae, only parted/divided - while in some cases the scopulae of the tarsal segment of leg 2, is divided by a thin line of setae.

A primary taxonomic difference between Chaetopelma and Ischnocolus is the presence in the former of a double tibial spur in the male. This is not present in Ischnocolus.

Generic key

- 1) Tarsal scopulae - Legs 3,4 divided by a wide band of setae.
 Leg 2 in some species divided by a thin band of setae.
 Leg 1 parted/divided - no band of setae.
- 2) Clypeus - absent or very narrow.
- 3) Labio-sternum mounds - present on suture between labium and sternum
- 4) Foveal groove - transverse.
- 5) Spines - present in large numbers on the tibia/metatarsus of legs 3,4.
- 6) Ocular arrangement - PME equal in size to PLE. In some cases they may be slightly larger (Note debatable taxonomic feature).
- 7) Tibial spur - primary and secondary segments, the former capped with a row or comb of short spines. There is also a long spine on the sides of both segments.
- 8) Palpal bulb - embolus is long, slender and tapering with no keels.

Synonymy

Raven (1985) had found the following genera of Strand to be synonymous with *Chaetopelma*:

1. *Encyocratella* Strand, 1907 (type lost - but congeners in the MNHP).
2. *Avicuscodra* Strand, 1908 (type in the SMF).

Species included

- Roewer, 1942: *C. adenense* Simon, 1890
C. aegyptiacum Ausserer, 1871
C. gardinieri Hirst, 1911
C. longipes Ausserer, 1875
C. olivaceum (Koch, 1842)
- Brignoli, 1983: *C. shabati* Hassan, 1950
- Platnick, 1989: *C. arabica* (Strand, 1908) [*Avicuscodra*]
C. olivacea (Strand, 1907) [*Encyocratella*]
- Smith, 1990: *C. webbi* Smith, 1990

Distribution

Widely distributed throughout the Middle East, Arabia and present on the Islands of Cyprus and the Seychelles (fig. 1a). I have discovered a new species of the genus, *C. webbi* from W. Africa, in the BMNH collection which indicates that the genus was once more widely distributed and I am convinced that material can probably be found in Niger, Chad and the Sudan.

Note. Only one species of this genus: *C. longipes* was recorded from Venezuela, South America. This new world example must be viewed with trepidation. Based on a single specimen, I would conclude that *C. longipes* was incorrectly ticketed (by no means an unusual happening when large numbers of specimens were despatched to National Collections by enthusiastic amateurs, often with data which leaves much to be desired). I suspect that it hails not from Venezuela, but the Middle East, and I believe that the species name should be suspended until redescribed with additional material.

Habitat

All reports which I have from collectors and data contained in specimen jars, indicates that *Chaetopelma* species are opportunistic burrowers - mostly excavating a silk lined chamber beneath rocks or under fallen masonry (fig. 1b).

Dr. A. Hassan (1988) stated that the Egyptian species, *C. shabati* is generally found "crouching in dark and damp places in old houses, old wells, lavatories and dampy ruins." residing on "a loose sheet of silk".

Note. Hassan (1950) recorded that *Chaetopelma* is found in burrows "from underneath thorny bushes in the desert near Fayoum, and from dark dampy places in towns".

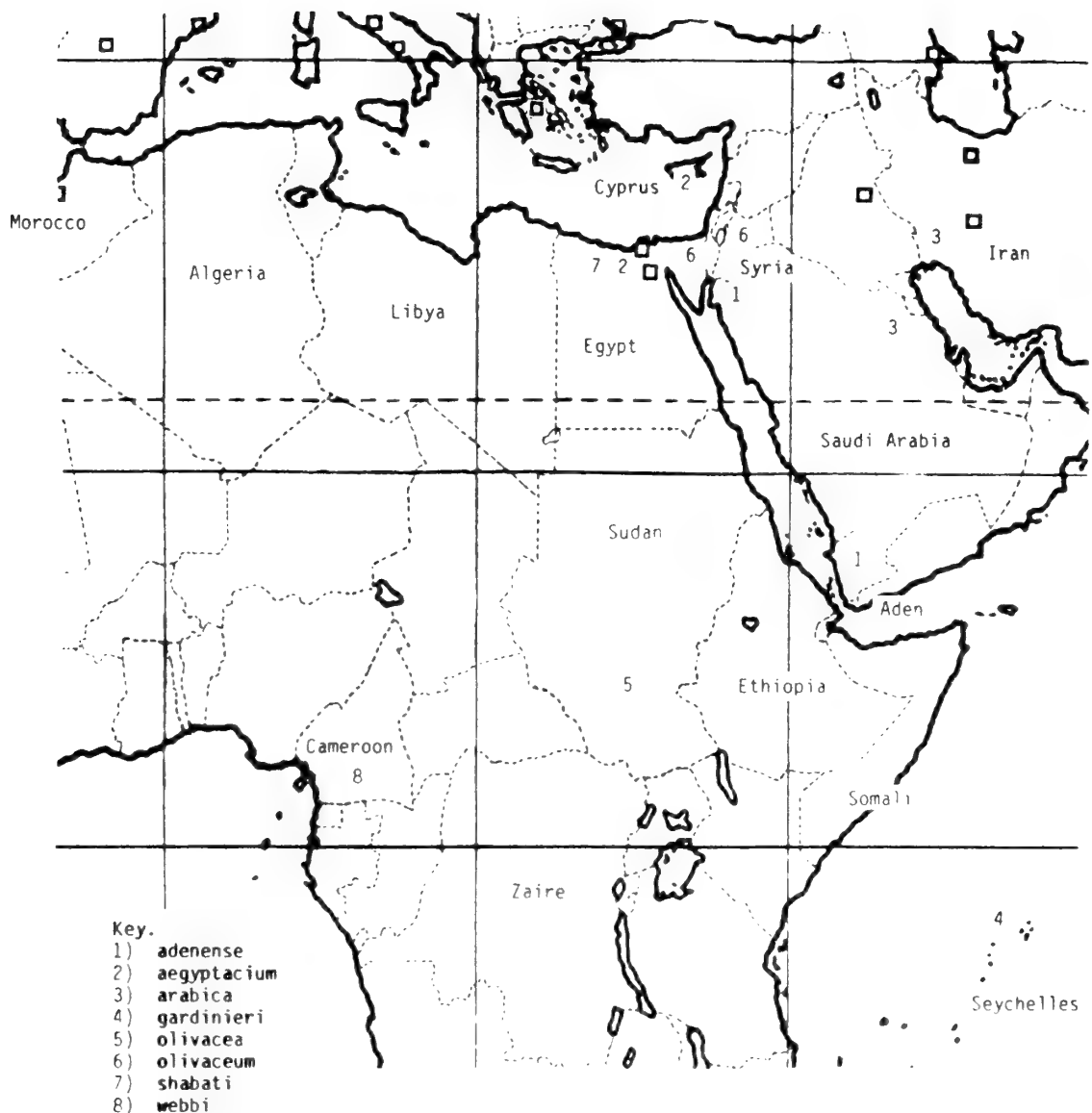
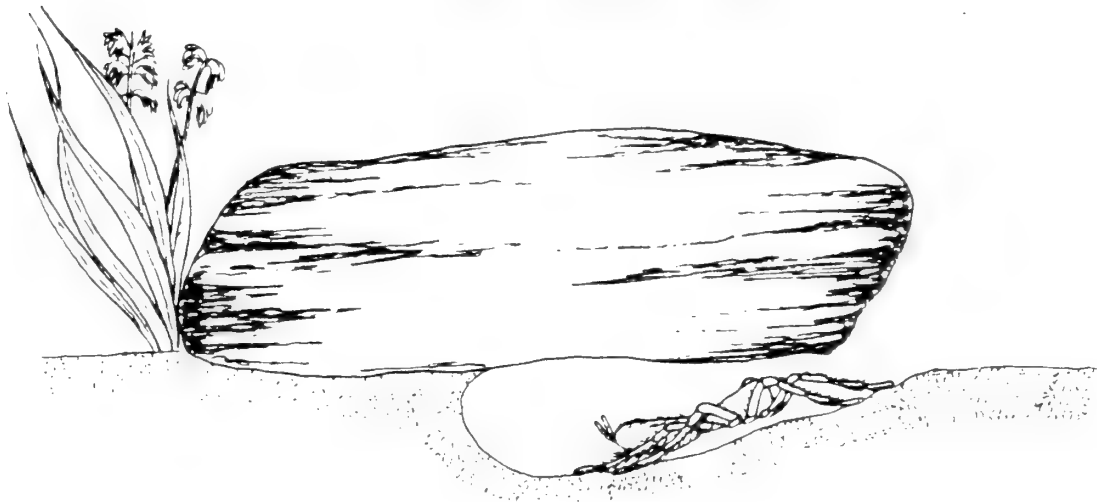


Fig.1a Distribution map of *Chaetopelma* species in the Middle East and Africa

Fig.1b Habitat of *Chaetopelma aegyptiacum*.



Habitat Cyprus - Paphos. Rock strewn gently sloping hillside, within 200 yards of the sea. Specimens (female) found in crudely excavated chambers beneath large flat rocks. No silk lip was visible and chambers were often shallow in depth.

Key to Egyptian *Chaetopelma* species

1. Clypeus present, narrow.
Male : Tibia of palp : with 3 spines
[I/C 2.76 , IV/C 3.09] C. *olivaceum*
- . Clypeus absent. 2
2. Length of leg 1 (or leg 4) is lesser than three times as carapace length [Male I/C 2.81, IV/C 2.96]
Male : Tibia of palp : with a single spine. C. *aegyptiacum*
- . Length of leg 1 (or leg 4) is greater than three times as carapace length [Male I/C 3.34, IV/C 3.60]
Male : Tibia of palp : with 3 spines. C. *shabati*

Description of Species

1. *Chaetopelma aegyptiacum* Ausserer, 1871 Cyprus (Figs. 1b, 2-16)

Ref. Ausserer (1871) p.191 Male/Female

Specimen Type not located. Possibly Vienna.* Hull-Williams/Smith collection male No. ME.101-11-88. Collected from Paphos, Cyprus by Mr. D. Garthwaite.

Common name Cypriot grey.

Distribution No type locality data. Paphos, Cyprus. Possibly Egypt but no sound data which indicates species is found outside Cyprus.*

Description **Male** Length 31mm.

Carapace 13.5x12mm. Chelicerae 4.5mm. Abdomen 13mm. Palp 21mm.

Leg 1 (38mm) Leg 2 (34mm) Leg 3 (30mm) Leg 4 (40mm). Legs 4, 1, 2, 3.

Clypeus absent (fig. 4).

Labium (fig. 2) with a broad band of granules/cuspules.

Tarsal scopulae: tarsus of leg 1 parted, of leg 2 divided by a thin line of setae, of legs 3, 4 divided by a wide band of setae.

Spines - see illustrations (figs. 11-14).

Tibia of palp (fig. 5) with a single spine.

Tibial spur (figs. 6, 7) stout primary segment with a comb of stout black spines.

Palp with strong triangle of granules on coxa.

Palpal bulb (fig. 16) embolus narrow and does not taper upwards.

Spinneret (fig. 3) apical segment slightly longer than basal segment.

Colour pale brown with grey setae.

Habitat Mediterranean dry vegetation, rocky hillsides (fig. 1b).

Behaviour Found under rocks in shallow chambers.

* Ed. Note: I think that the type of *Chaetopelma aegyptiacum* is kept in Naturhistorisches Museum Wien, collected from Egypt. Also, there are specimens of this species(?) in the same museum, collected from different localities: Cyprus 1862 (3 specimens by Kotschy), Alexandria 1868 (4 by Kirchner), Upper Egypt 1872 (2), in addition to Jerusalem, Jaffa, and Beirut.

2. Chaetopelma olivaceum (Koch, 1842) Middle East (Figs.17-33)

Ref. Koch (1842) p.34, fig.712 Female

Ausserer (1875) p.173 (Ischnocolus striatocauda)

Strand (1907c) p.21 Male

Specimen BMNH. 1950-3-30-122-123.

Common name Middle East olive gold.

Distribution Beirut, Amioun, Lebanon. Jaffa. Syria. Cairo, Egypt. Possibly widely dispersed across the Middle East - but centered in Lebanon and Syria.

Description Male Length 40mm.

Carapace 17x14mm. Chelicerae 5mm.

Leg 1 (47mm) Leg 2 (44mm) Leg 3 (40mm) Leg 4 (52.5mm). Legs 4,1,2,3.

Clypeus present, narrow (fig.28).

Labium, sternum, and coxa of palp (fig.18). For layout of granules/cuspsules on labium and sigilla on sternum - see illustration.

Tarsal scopulae: (figs.21-23) Tarsus of leg 1 parted. Legs 2,3,4 divided by setae.

Spines - see illustrations (figs.25,26) for layout of spines on legs 3,4. Tibia of palp (fig.32) 3 spines on tibia.

Tibial spur (figs.29,30) primary segment is less rounded than is the norm and has a comb of spines which are relatively short.

Coxa of palp (fig.20) Short bristles are present on retrolateral face.

(In C.shabati these tend to be soft setae.)

Palpal bulb (fig.31).

Spinneret (fig.19) apical segment longer than basal.

Female Spermathecae - seminal receptacles are narrow and bowed with a distinct long narrow head/lobe (fig.33). (In C.shabati they are more rounded, but obviously closely related.)

Remarks Strand (1907c) noted Egypt as a collection site - but it is likely that the specimen, dispatched to him by Klunzinger, was an early unrecognized example of C.shabati - which he presumed to be C.olivaceum.

Habitat/Behaviour dry scrubland - the spider excavating chambers under rocks or crude burrows beneath thorny bushes.

3. Chaetopelma shabati Hassan, 1950 Egypt (Figs.34-50)

Ref. Hassan (1950) p.163 Male/Female

Specimen Female. BMNH 1948-11-23-19. Sent by Hassan.

Common name Egyptian basement brown.

Distribution Cairo, Fayoum, Egypt. Common to locality.

Description Female Length 44mm.

Carapace 17x13.5mm. Chelicerae 6mm. Palp 27mm.

Leg 1 (41.5mm) Leg 2 (37mm) Leg 3 (34mm) Leg 4 (44mm). Legs 4, 1, 2, 3.

Clypeus absent (fig.36).

Labium, sternum, and coxa of palp (fig.35). For layout of granules/cuspsules on labium and sigilla on sternum - see illustration.

Tarsal scopulae: (figs.39-42) Tarsus of leg 1 parted. Legs 2, 3, 4 divided by setae.

Spines - see illustrations (figs.45,46) for layout of spines on tibia-metatarsus of legs 3, 4.

Trochanter-coxa of leg 1 (fig.37) Note soft setae.

Spinneret (fig.38) apical segment much longer than basal segment.

Spermathecae (fig.47) Seminal receptacles - stems of equal size, with rounded lobes.

Male Length 33.5mm.

Carapace 16.5x15mm. Chelicerae 6mm. Abdomen 17mm. Palp 30mm.

Leg 1 (55.1mm) Leg 2 (51.2mm) Leg 3 (48.5mm) Leg 4 (59.5mm).

Legs 4, 1, 2, 3.

Tibial spur (figs.48,49).

Palpal bulb (fig.50).

Spinnerets 7mm.

Colour Blackish brown (dried uniform chestnut brown). Legs, blackish brown with thin brown longitudinal lines. Abdomen, yellowish with chestnut brown pubescence.

Habitat/Behaviour Seeks out damp, dark cellars and ruins.

Remarks Hassan's paper (1950) is excellent and it is a great pity he never embarked upon a revision of Middle East theraphosids. He recorded that in Egypt these spiders are commonly known as "Abu-shabat", and in Syria, Iraq, Jordan, and Hedjaz as "Shabath".

References

Ausserer, A. 1871

Beiträge zur Kenntniss der Arachniden-Familie der Territelariae

Thorell (Mygalidae Autor.).

Verh.zool.bot.Ges.Wien,21:117-224, pl.I.

----- 1875

Zweiter Beitrag zur Kenntniss der Arachniden-Familie der

Territelariae (Mygalidae Autor.).

Verh.zool.bot.Ges.Wien,25:125-206, pl.5-7.

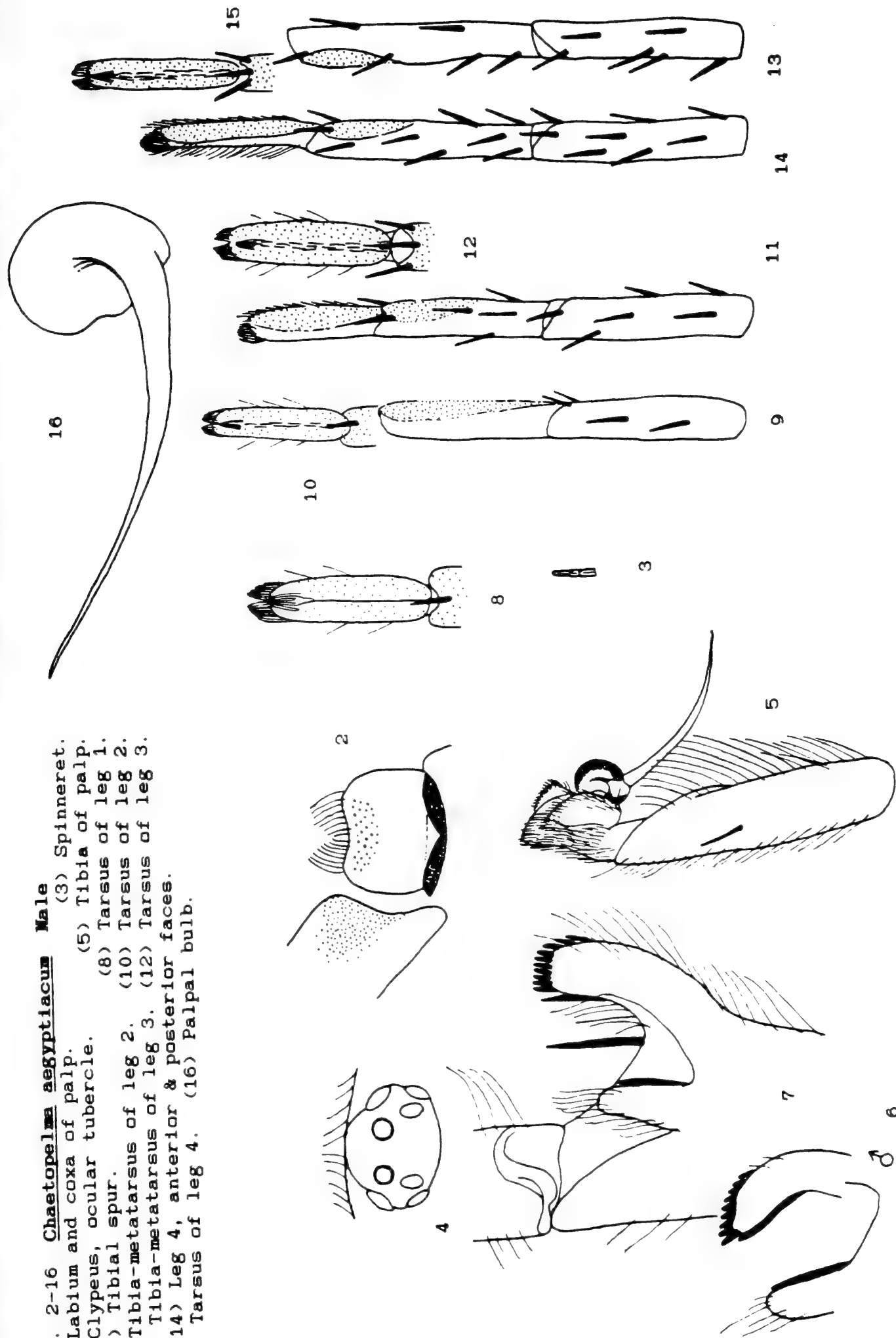
Brignoli, P.M. 1983

A Catalogue of the Araneae described between 1940 and 1981.

Ed. P.Merrett. 755pp. Manchester Univ.Press.

Figs. 2-16 *Chaetopelma aegyptiacum* Male

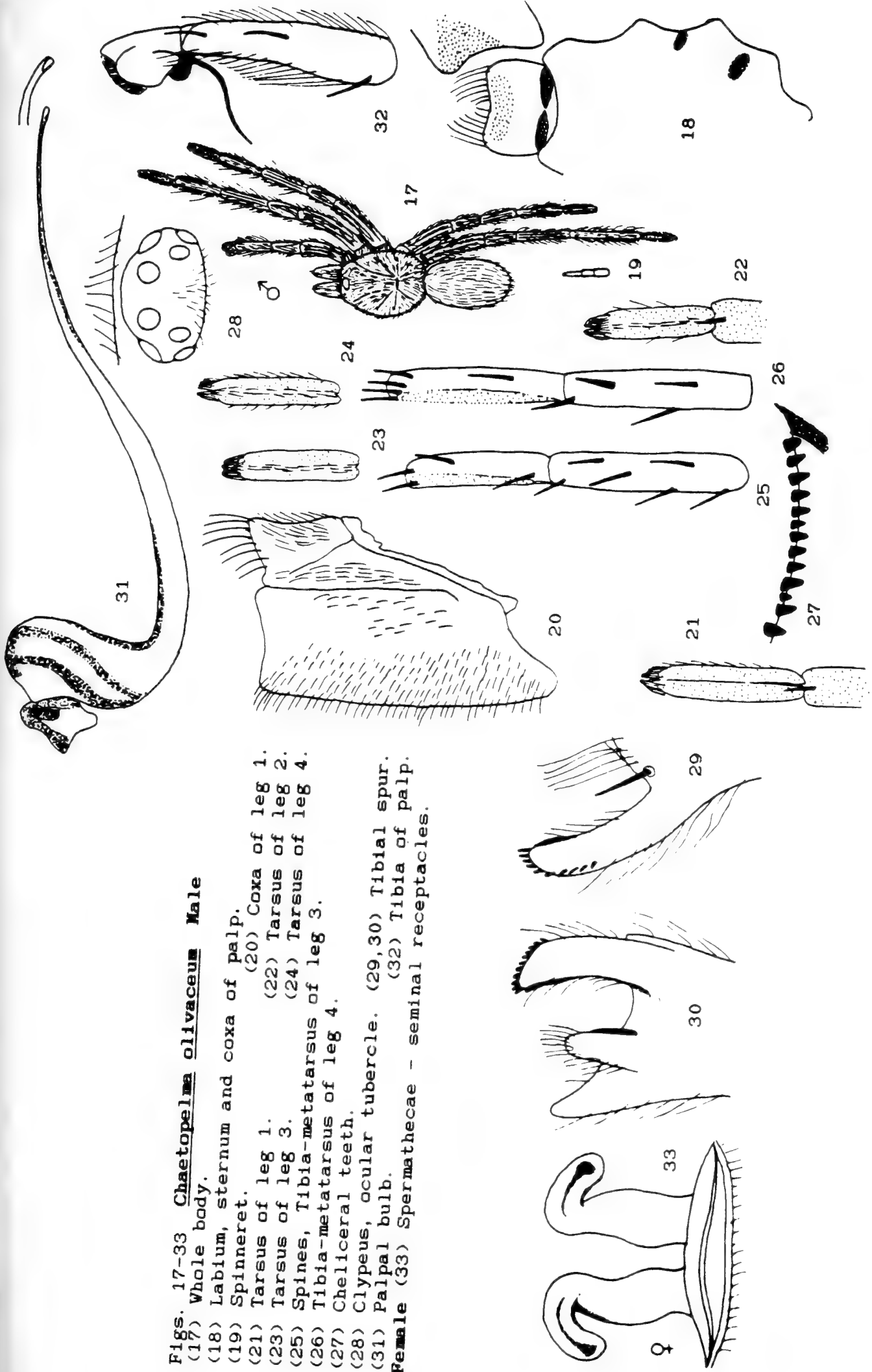
- (2) Labium and coxa of palp.
 (4) Clypeus, ocular tubercle.
 (6,7) Tibial spur.
 (9) Tibia-metatarsus of leg 2. (10) Tarsus of leg 1.
 (11) Tibia-metatarsus of leg 3. (12) Tarsus of leg 2.
 (13,14) Leg 4, anterior & posterior faces.
 (15) Tarsus of leg 4. (16) Palpal bulb.



Figs. 17-33 Chaetopelma olivaceum Male

- (17) Whole body.
 (18) Labium, sternum and coxa of palp.
 (19) Spinneret.
 (21) Tarsus of leg 1.
 (23) Tarsus of leg 3.
 (25) Spines, Tibia-metatarsus of leg 3.
 (26) Tibia-metatarsus of leg 4.
 (27) Cheliceral teeth.
 (28) Clypeus, ocular tubercle.
 (29,30) Tibial spur.
 (31) Palpal bulb.
 (32) Tibia of palp.

Female (33) Spermathecae - seminal receptacles.



Figs. 34-50 *Chaetopelma shabati* Female

(34) Whole body.

(35) Labium, sternum and coxa of palp.

(36) Clypeus, ocular tubercle.

(37) Trochanter-coxa of leg 1. (38) Spinneret.

(39) Tarsus of leg 1. (40) Tarsus of leg 2.

(41) Tarsus of leg 3. (42) Tarsus of leg 4.

(43) Tibia-metatarsus of leg 1.

(44) Tibia-metatarsus of leg 2.

(45) Tibia-metatarsus of leg 3.

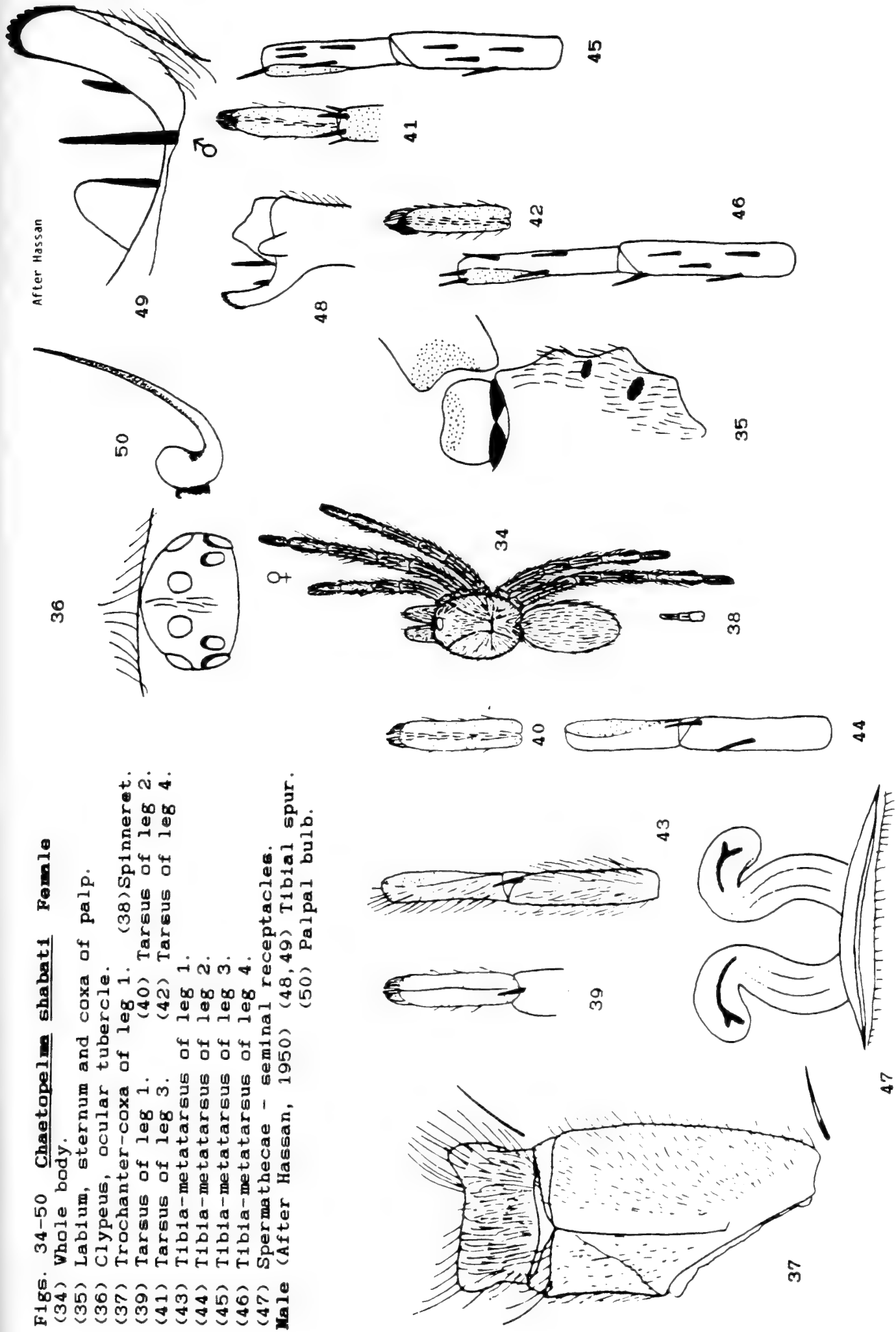
(46) Tibia-metatarsus of leg 4.

(47) Spermathecae - seminal receptacles.

Male (After Hassan, 1950) (48,49) Tibial spur.

(50) Palpal bulb.

After Hassan



- Hassan, A. I. 1950
The Theraphosidae in Egypt, with a description of Chaetopelma shabati spec. nov. (Araneae).
Bull. Soc. Fouad 1er Entom., 34:159-171.
- , 1988
Feeding and feeding apparatus of Chaetopelma shabati Hassan, 1950.
Serket, 1(2): 1-12.
- Hirst, S. 1920
Arachnida and Myriapoda injurious to man.
British Museum (Natural History), Economic Series No.6,
2nd ed., 60pp., London.
- Koch, C. L. 1842
Die Arachniden. vol.9, 108pp., pls.289-324, figs.695-755. Nürnberg.
- Platnick, N. I. 1989
Advances in Spider Taxonomy 1981-1987.
Ed. P. Merrett 673pp. Manchester Univ. Press.
- Pocock, R. I. 1897
On the spiders of the suborder Mygalomorphae from the Ethiopian region, contained in the collection of the British Museum.
Proc. Zool. Soc. London, 1897:724-774, pls.41-43
- Raven, R. J. 1985
The spider Infraorder Mygalomorphae (Araneae): Cladistics and systematics.
Bull. Amer. Mus. Nat. Hist., 182(1):1-180.
- Roewer, C. F. 1942
Katalog der Araneae von 1758 bis 1940.
1. Band 1040pp. Bremen.
- Simon, E. 1892
Histoire Naturelle des Araignées. 2ème ed. Paris.
Tome I(1):1-256, figs.1-215.
- Smith, A. M. 1990
Baboon Spiders, Tarantulas of Africa and the Middle East.
Fitzgerald Publishing, London. 142pp., 946figs.
- Strand, E. 1907a
Vorläufige Diagnosen afrikanischer und südamerikanischer Spinnen.
Zool. Anz., 31(17-18):525-558.
- , 1907b
Afrikanischer und südamerikanischer Aviculariiden an dem Natur Museum Lübeck.
Zeitschr. Naturw., 79:170-266.
- , 1907c
Aviculariidae und Atypidae des Kgl. Naturalienkabinetts in Stuttgart.
Jahresh. Ver. Nat. Württbg., 63:1-100.
- , 1908
Diagnosen neuer aussereuropäischer Spinnen.
Zool. Anz., 32(25):769-773.

Arachnida of Wadi El-Raiyan (Egypt)

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Introduction

"Wadi El-Raiyan is a depression existed in the Western Desert of Egypt, about 65 km south-west of El-Fayum town and 80 km west of the Nile river. The study area, Oyun El-Raiyan (El-Raiyan Springs), (about 29 05 N, 30 26 E) is at the south-western edge of that depression.

Wadi El-Raiyan depression, and the surrounding area, is a site of eolian sand deposition and extensive dune formation. Oyun El-Raiyan area is a small, roughly square-shaped depression, cut into the eastern side of the fossiliferous Middle Eocene limestone cliffs of Gebel El-Raiyan (175 m). The area is hyperarid with mild winter and hot summer.

Three natural springs are found in the study area (1st: northern, 2nd: western, and 3rd: southern). Vegetation is confined to interdune areas, around springs and the bases of large dunes although the dunes themselves are not vegetated." (Saleh et al., 1988)

Different species of mammals, birds and reptiles were recorded from the wadi by Saleh et al. (1988). The invertebrate fauna is wide and rich.

This study is one of the studies devoted to explore the invertebrate fauna in the wadi. Most of the specimens used in this study were collected by the author during a field trip to the wadi from 8th to 12th June, 1990. A few specimens which were collected by Dr. Saleh from the wadi in different dates are also included in this study.

A collection of 364 specimens of five different orders of Arachnida were collected during five days and four nights. Most of them were spiders (220) and scorpions (112) with 24 pseudoscorpions, 4 solpugids, and 4 ticks. Scorpions only (and a small Solpugid) were collected during night using the ultra-violet light. Night collecting was near the first spring (8th & 10th June), the second (9th), and the third spring (11th June). Collecting during day was near the first spring (8th-12th), the second (9th-10th), and the third spring (11th June).

Acknowledgments

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I thank too Drs. S.Saber, M.Taha, M.Bassiouni, A.Galhoun, and A. Lotfy of the field research team who helped me with other colleagues in collecting specimens.

I am also grateful to Dr. Volker Mahnert (Geneva) and Dr. Norman Platnick (New York) who identified *Olpium* (Ps.) and *Setaphis* (Ar.).

Results

Order Araneida

More than two hundred spiders were collected through 8-12th June. Thirteen families were represented in the wadi. They are listed below with the approximate number of species in each family (table 1).

Eleven families were recorded from the first spring area, seven from the second spring area, eight from the third spring area, and eight from the phytogenic mounds in the interdunes area near the first spring and near the lower lake (El-Raiyan lake).

Agelenidae, Eresidae, and Salticidae are represented in the four areas. A comparison between the four areas with the habitat of every family (A: arboreal; T: terrestrial; W: wandering) are tabulated below (table 1).

Table 1

Family	# Spp.	Habitat	I	II	III	Ia
Agelenidae	1	A	+	+	+	+
Araneidae	3	A		+	+	+
Clubionidae	2 ?	A	+		+	+
Dictynidae	1	A	+			+
Eresidae	1	A	+	+	+	+
Gnaphosidae	4	T, A, W	+	+	+	
Lycosidae	3	W	+	+	+	
Oxyopidae	2	A, W	+			
Philodromidae	3	A	+			+
Salticidae	3	A, W	+	+	+	+
Tetragnathidae	1	A		+		
Theridiidae	2 ?	T, A	+		+	+
Thomisidae	1	A	+			

[I, II, III: 1st-3rd spring areas; Ia: phytogenic mounds, etc.]

The identification of the species need a long time due to the lack of enough knowledge and experience with the spider species of my country. The main references used for identification are Audouin (1825), Cambridge (1876), Denis (1947), and Simon (1892-1903). Every family is dealt with below in an alphabetical order.

1. Family Agelenidae

One species of this family, Agelena lepida Cambridge, 1876, is found in every place in the wadi. It is recorded from the four areas studied. It was found on different kinds of plants: Alhagi maurorum Medic., Calligonum comosum L'Hér, Nitraria retusa (Forskål), and Tamarix nilotica (Ehrenberg). It prefers the sun-facing sides of these plants. The Agelenid nests were found on different heights from the ground level to 150 cm up. The nests are very characteristic with their sheet webs and the attached tubular retreats.

The types of Agelena lepida (from Egypt) are redescribed with excellent detailed drawings by De Blawe (1980, pp.19-23, figs.30-35). Material examined: (69 specimens): I: 8.6, 1♂, 6♀♀, 6juv; 9.6, 1♀, 4♂, 3♀♀, 13juv; 11.6, 1juv; II: 9.6, 3♂, 1♀♀, 5juv; III: 11.6, 2juv; Ia: mounds near I: 8.6, 1♂, 1♀; 10.6, 1♂, 1♀, 5♂, 2♀♀, 5juv; near the lake: 10.6, 1♂.

2. Family Araneidae

This family is represented by three species in the Wadi.

A subadult female Argiope trifasciata (Forskål, 1775) was found in the hub of its orbweb, about 70 cm up from the ground, among Juncus rigidus Mey on a water stream coming from the second spring (9th June).

The second species is Argiope lobata (Pallas, 1772). A female specimen was found in the hub of its orbweb above a very slim stabilimentum of 2 cm long. The diameter of the web was about 30 cm. It was about 10 cm up from the ground. The web was found on a mound covered by Calligonum, about 2 km east of the first spring (10th June).

The third species, Cyrtophora citricola (Forskål, 1775), was found on both Calligonum and Tamarix, near the third spring (11th June). The web of this species is of a special design, constituted of a net and an irregular web. The spider stays in the middle of the upper part of the web with some carcasses of its preys below it and an egg sac or sometimes two. The webs found on Calligonum plants were about 30 cm up from the ground, facing the sun. On Tamarix, the webs were about 50 cm up from the ground, facing the sun or on the other side. A female in its web was found on a fence, built by Phragmites stems, on a high mound, about 160 cm up from the ground. One female and four subadult females were collected.

3. Family Clubionidae

Cheiracanthium is the only genus of this family which is found in the wadi near the first and third springs. Two juveniles were found near the first spring (8th June). One male, two subadult males, and two juveniles of the same species were also found near the first spring (9th June). The adult male was found inside a deserted salticid nest, eastwards, about 120 cm up from the ground, on a Nitraria shrub. A subadult male, of olive colour (may be another species), was found in its nest, about 30 cm up from the ground, on Alhagi on a phytogenic mound near the first spring (9th June). An adult female was found inside her nest, about 30 cm up from the ground, on Alhagi, in a place about 200 m south-east the third spring (11th June).

4. Family Dictynidae

The nests of one species of genus Dictyna (5 adult and subadult females) were found on low herbs on the edges of a water stream coming from the first spring directly (8th June). Their nests were found also on Nitraria, about 70 cm up from the ground, in the shaded area inside the shrub, near the first spring. A female of the same species was found inside her nest on Calligonum near the Lower lake (10th June).

5. Family Eresidae

Only one species of Genus Stegodyphus of this family was found in the Wadi. It is very near to S. dufouri (Audouin, 1825) which is widely distributed in the Nile valley. It may be described as a new species after making accurate comparisons with allied species.

This species is firstly recorded from the area of the first spring. Its nests were found on Nitraria, Juncus, and Tamarix. The largest web was found on Tamarix. It was triangular in shape (120x97 x70 cm) and about 30 cm up from the ground. There were many nests with attached webs on Tamarix in that area.

The nests of this species in the area of the second spring were mostly on Juncus near water. The webs there were larger than those found in the area of the first spring. One of them was nearly rectangular in shape (about 50x50 cm).

The same species was found with its large webs and tubular nests on Nitraria on phytogenic mounds near the third spring.

Both males and females were found. Egg sacs were also found with females inside nests. Juveniles too, were found in separated nests on Nitraria in an interdunes area, about 2 km east of the first spring. Ballooning behaviour of the spiderlings play its role in the dispersion of this species in the Wadi and to the surrounding areas.

6. Family Gnaphosidae

Four species of three genera are found in the wadi. Five specimens of Pterotricha schaefferi (Audouin, 1825) were collected from the wadi. A wandering male was found by Dr. Taha, 10:00 am (9th June) near the first spring. Two other males were found in the entrance of a small mammal's burrow under a phytogenic mound, about 500 m from the second spring (10th June). Another male and a subadult female were found wandering near the first spring at 11:20 am (11th June). This species had been described by Koch (1875) as Gnaphosa aethiopica.

A brown female of genus Haplodrassus? was found in the first spring area in a deserted salticid nest on Nitraria (9th June). A similar female of another species was found wandering near an insect light trap, at night, about 200 m south-west of the third spring (11th June).

A small male of genus Setaphis (Identified, depending on my description, by Dr. Platnick) was found under a stone very near to the first spring itself (11th June).

7. Family Lycosidae

Three species of three genera were found in the wadi. A female Trochosa sp. was found in the third spring area by Dr. Saleh (17 November 1989).

Numerous specimens of Pirata sp. were found near water streams and walking on the water surface near the three springs (8-11 June). Both males and females of the same species were found in abundance, and a few females were carrying egg sacs attached to their spinnerets. They move very rapidly.

Material examined: (36 specimens): I: 8.6, 10♂, 10♀, 1♂, 3♀, 2juv; II: 9.6, 1♀, 1♂, 1♀, 4juv; 10.6, 1♂; III: 11.6, 2♂.

Specimens of Evipa unguata (Cambridge, 1876) were found wandering on the ground or under stones near the first spring (8-12 June). A male and a subadult female were found in the entrance of a small mammal's burrow, about 500 m from the second spring (10th June).

Four of the eleven specimens found in the area of the first spring were found inside pitfall traps. This is due to the wandering behaviour of this very active species.

Material examined: (13 specimens): I: 8.6, 2♂, 1♀; 9.6, 1♀, 1juv; 11.6, 1♂, 1♂, 1♀, 1juv; 12.6, 2♂; II: 10.6, 1♂, 1♀.

8. Family Oxyopidae

Two species of two genera were found in the area of the first spring. The first one is Peucetia sp., which is a beautiful green spider with red and yellow colourings, living among green Alhagi plants, hiding among leaves, waiting for preys moving on plants or on the ground. A subadult male and a juvenile were collected near the first spring on 8th June.

The second is Oxyopes sp., which is a brown spider moving on brown stems of plants, to camouflage its preys. Four specimens were collected; a male and a female (11th June) and 2 juveniles (8th & 9th June). The male Oxyopes was found in a pitfall trap. The female was picked up by Dr. Saleh from above a tent in our camp. The two juveniles were found on Nitraria plants. The two adult specimens are something similar to O. heterophthalmus (Latreille, 1804), but they are not of this species nor of O. lineatus Latreille, 1806, which are already recorded from Egypt (El-Hennawy, 1990). The female specimen is identical to a specimen collected from Sidi Abdel Rahman (near El-Alamin, almost 30 50 N, 28 57 E) in August 1989 by Dr. H. Fadl. This Oxyopes sp. will be a new record from Egypt, if not a new species to science. The Mediterranean Oxyopes has "too many "forgotten" or dubious species and uncertain synonymies" as Brignoli (1978) stated.

9. Family Philodromidae

Three genera of this family are represented in the wadi. A juvenile Philodromus and two juvenile Thanatus were collected from the first spring area (8-9 June). A subadult male Ebo with green abdomen and white-patched cephalothorax and legs was found near the lake by Dr. Saleh.

10. Family Salticidae

Salticids of three different species were collected from the four studied areas. They were found wandering or inside ecdysis nests or egg sac nests.

A small subadult female of Salticinae was found in the first spring area (8th June). Another Juvenile of Sitticinae was found in the second spring area (9th June).

Mogrus bonnetii (Audouin, 1825) is the third species. It is represented in the four areas by numerous specimens. Both males and females were present. Some of the egg sacs were hatched and some were empty after the emergence of the spiderlings. The nests were found on different kinds of plants: Alhagi, Calligonum, Nitraria, and Tamarix. Those nests were found on different heights on the plants, 40-175 cm up from the ground.

Material examined: (24 specimens): I: 8.6, 2♀; 9.6, 1♂, 4♀, 1♂, 1♀, 3juv; II: 9.6, 1juv; III: 11.6, 1♀, 1juv; Ia: mounds near I: 9.6, 1♂, 1♀, 1♂, 1♀; near the lake: 10.6, 3♀, 1♂, 1juv.

11. Family Tetragnathidae

Only one female Tetragnatha nitens (Savigny, 1825) was collected from the area of the second spring by Dr. Saleh, in August 1990.

12. Family Theridiidae

This family is represented by a few small spiders of genus Theridion? (5 females and 1 subadult male) found on Nitraria and under stones near the first spring (9th June) and near the Lower lake (10th June). Another small female spider of the same family fell from the air on a tent in the area of the third spring (11th June, in the afternoon). Those specimens are similar to each other and may be of the same species.

13. Family Thomisidae

Only one specimen, a subadult female Thomisus onustus Walckenaer, 1805 was found in its nest on Nitraria. The nest was on the side facing the east direction. It was 150 cm up from the ground. That spider was collected in the morning of 9th June near the first spring.

Comparison with Western desert records:

Depending upon two papers of Denis (1947) and Simon (1899), a comparison is established between the families, genera, and species of spiders found in Wadi El-Raiyan and the same taxa in Siwa Oasis and Wadi Natron in the Western desert of Egypt, to know if they are new records or not (table 2).

Order Scorpionida

More than one hundred of specimens of two species of scorpions of Family Buthidae were collected. One hundred and eleven specimens of Buthacus leptochelys (Hemprich & Ehrenberg, 1829) were collected near the three springs. This species is found mainly among Alhagi plants, near Nitraria and Tamarix, and also occasionally in open desert. It is evident that it is the most dominant scorpion species in the wadi.

The second species is Androctonus amoreuxi (Audouin, 1825). It was encountered only once (9th June, 9:10-10:10 pm) wandering among Alhagi plants near the second spring. It is bigger and stronger than B. leptochelys. It is not evident why this species is not encountered again during that trip? Observation of scorpion activity throughout the night may lead to a satisfactory explanation. I think that this species prefer more arid zones or that its activity is confined to late hours of the night. (Dr. Saleh told me later that during another trip to the wadi, in August 1990, many samples of A. amoreuxi were found in pitfall traps in the area of the 2nd spring.)

Collecting scorpions using Ultra-Violet light yielded good results which are better than the results of using pitfall traps or eye search method. Six pitfall traps were used through four days and nights. The result was six scorpions only. Only two scorpions were found under stones (eye search). The collecting with UV light was for only one hour every night. The results and date of collecting near the first spring (only) were tabulated below (table 3), with the method of collecting for comparison. It is evident that the UV light is a very efficient method for collecting scorpions.

Table 3

Date	UV	Pitfall trap	Eye search
8th June	22	1	-
9	(no collecting)	2	-
10	26	1	-
11	(no collecting)	2	1
Total	48 (2 hours)	6 (4 nights)	1 (4 days)

The abundance of B. leptochelys in the areas of the three springs and in an interdunes area (near the first spring) is compared in the following table (Time of collecting = one hour).

Table 4

Area	Date (June)	Number
1st spring	8	22
-----	10	26
Interdunes	10	8
2nd spring	9	8 + 7 juv.
3rd spring	11	12 +13 Juv.

The ratio of juveniles to adult scorpions were 46.67% in the collection from the second spring area and 52% in the collection from the third spring area. No juveniles were encountered in the first spring area (?).

One of the most attractive observations which can be observed rarely in field, is the sexual behaviour of scorpions. On 11th June, in the area of the third spring at 9:45 pm, in complete darkness, I had found a male and a female B. leptochelys with their pedipalps attached to each other. They were dancing in their movement which is called "Promenade à deux" in the steps of scorpions' courtship. There were "Kissing" behaviour (chelicerae to chelicerae) and "lateral kissing" (chelicerae to mesosoma) too, during their "promenade".

In fact, it was a very marvellous scene, specially with the fluorescing bodies of the two scorpions under UV light on a dark background. That behaviour attracted me, Dr. Saleh, Dr. Saber, and Mr. Bassiouni for 20 minutes, after which I was obliged to pick them up.

The two collected species are already known from Siwa Oasis (Whittick, 1947) in the Western desert near Libya. Also, B. leptochelys is known from Khargeh Oasis and Birket el Kerun (near El-Fayum), and A. amoreuxi is known from Baharia Oasis, Siwa, Sollum, and Tamia (north east El-Fayum) (Gough & Hirst, 1927).

Order Pseudoscorpionida

Twenty four specimens of the same species of Family Olpiidae (Olpium kochi Simon, 1881 ? Identified by Prof. Dr. V. Mahnert, of Mus. Hist. Nat. Genève) were collected at one day (11th June, 10:40-12:00 am) They were found under nine stones near the first spring (7-50 m from the spring itself). The sand under those stones was completely dry except under three stones only (33.33%) where it was slightly humid. There were five pseudoscorpions under those three stones (20.80% of the specimens). Two females were found under two of those stones (slightly humid), without any other female in the collection. The distribution of the samples near and far the first spring is regular, except that 8 specimens were found under the same stone (7m from the spring).

The method of collecting, eye search, is not efficient enough to find more than the collected specimens to be able to know the real density and distribution of pseudoscorpions in the area of the first spring.

Olpium kochi is known before from Bir-Hooker (Wadi Natron) in the Western desert (Simon, 1899). It is also recorded from Cairo and Assuan (El-Hennawy, 1988).

Order Solpugida

Four solpugids of Family Galeodidae were collected.

9th June: The first specimen was caught at 4:45 pm among stones of a wall (160 cm) built beside Gebel El-Raiwan, about 300m west of the second spring. It was a big female of genus Galeodes (43 mm long).

The second specimen was collected at night (9:30 pm) during scorpion collecting, using UV light, in the area of the second spring. It was a juvenile Galeodes (16 mm long) moving among Albagi plants. It was fluorescing clearly under the UV light. A few minutes after that, I had found a bigger solpugid fluorescing faintly but I couldn't seize it.

10th June: The third specimen had been discovered by Dr. Saleh at 1:10 pm, south of El-Medawwara (north-east the first spring), when he was driving his car towards the lower lake. It was found near two stones in the open desert. I couldn't find any trace of a burrow under those two stones. The specimen was a juvenile Galeodes (29 mm long) with bright orange hairs on its legs.

12th June: The fourth specimen was collected from the driver seat of Dr. Saleh's car at 9:00 am. It was a tiny galeodid trying to hide between two folds of the seat.

Near the first spring, in 8th June, at 9:45 pm, I had found a big solpugid fluorescing faintly under the UV light. It was trying to dig in sand. I failed to seize it because it was very fast.

Family Daesiidae is also represented in the wadi. A juvenile daesiid specimen of 6 mm long and (1:2:2:3) tarsal segmentation was collected by Dr. Saleh near the 3rd spring in November 17th, 1989.

There is only one record of Galeodes graecus C. Koch from Bir-Hooker (Wadi Natron) in the Western desert (Simon, 1899) which is known to me.

Order Acarida

Four ticks (Suborder Ixodides) were collected. Three of them near the first spring (8-11 June) and the fourth one near the third spring (11th June). I found them running towards me from beneath the plants except one tick found under a stone on dry sand about 15 m from the first spring itself. The ticks were running in the midday (about 12am). The four ticks are of the same species. It is evident that they are ectoparasites on mammals living in the wadi or travelling through it.

Table 2

Wadi El-Raiyan	Siwa Oasis	Wadi Natron
Agelenidae	*	*
Agelena lepida	+	+
Araneidae	*	*
Argiope lobata		
A. trifasciata	+	+
Cyrtophora citricola	+	+
Clubionidae	*	*
Cheiracanthium	+	+
Dictynidae	*	*
Dictyna		+
Eresidae	*	*
Stegodyphus	+	+
Gnaphosidae	*	
Haplodrassus ?		
Pterotricha schaefferi		
Setaphis		
Lycosidae	*	*
Evipa unguolata	+	
Pirata		
Trochosa		
Oxyopidae	*	
Oxyopes	+	
Peucetia	+	
Philodromidae	*	*
Ebo		
Philodromus	+	+
Thanatus	+	
Salticidae	*	*
Mogrus bonnetii	+	+
Tetragnathidae	*	*
Tetragnatha nitens	+	+
Theridiidae	*	*
Theridion ?	+	+
Thomisidae	*	*
Thomisus onustus	+	Thomisus sp.

* = Family, or + = Species : recorded from that area

REFERENCES

- Audouin, V. 1825
Explication sommaire des planches d'Arachnides de l'Égypte et de la Syrie, publiées par Jules-César Savigny.
In: Description de l'Égypte, ou Recueil des observations et des recherches qui ont été faites en Égypte pendant l'expédition de l'armée française. Histoire Naturelle. Tome Premier 1809. Paris. 4e partie, pp.99-186, 9 pls. (Arachnides).
- Blauwe, R. de 1980
Revision de la famille des Agelenidae (Araneae) habitant la region mediterraneenne. (3e partie).
Bull. Inst. r. Sci. nat. Belg., 52(11) Ent.: 1-28.
- Brignoli, P.M. 1978
Spiders from Lebanon, III. Some notes on the Pisauridae, Agelenidae and Oxyopidae of the Near east.
Bull. Br. arachnol. Soc., 4(5): 204-209.
- Cambridge, O.P. 1876
Catalogue of a collection of spiders made in Egypt, with descriptions of new species and characters of a new genus.
Proc. Zool. Soc. Lond., 1876, pp.541-630, pls.58-60.
- Denis, J. 1947
Spiders [Araneae]. Results of the Armstrong College Expedition to Siwa Oasis (Libyan desert), 1935.
Bull. Soc. Fouad 1er Entom., 31: 17-103, 6pls.
- El-Hennawy, H.K. 1988
Pseudoscorpions of Egypt, Key and List of Species (Arachnida : Pseudoscorpionida). SERKET, 1(3): 9-18.
----- 1990
Annotated Checklist of Egyptian Spider Species (Arachnida : Araneae). SERKET, 1(4-5): 1-49.
- Gough, L.H. & Hirst, S. 1927
Key to Identification of Egyptian Scorpions.
Bull. Ministry Agriculture Egypt, Tech. Scient. Serv., 76: 7pp., 5pls.
- Koch, L. 1875
Aegyptische und Abyssinische Arachniden, gesammelt von Herrn C. Jickeli. Nürnberg 1875. 96pp., 7pls.
- Saleh, M.A., Saber, S.A. & Saleh, M.A. 1988
The structure of the sand dune ecosystem of Wadi El Raiyan, Egypt. J. Arid Environments, 15: 283-296.
- Simon, E. 1892-1903
Histoire Naturelle des Araignées. 2ème ed. Paris.
Tome I(1-4) 1892-5: 1084pp., Tome II(5-8) 1897-1903: 1080pp.
----- 1899
Arachnides recueillis par M.C.-J. Dewitz en 1898, à Bir-Hooker (Wadi Natron), en Égypte. Bull. Soc. ent. Fr., 1899, pp.244-247.
- Whittick, R.J. 1947
Scorpiones [Arachnida]. Results of the Armstrong College Expedition to Siwa Oasis (Libyan desert), 1935.
Bull. Soc. Fouad 1er Entom., 31: 121-126.

New Locality Records of Thomisidae in Egypt

(Arachnida : Araneida)

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Family Thomisidae is represented in Egypt by 10 genera and 23 species (El-Hennawy, 1990). Four genera of them (6 species) are dealt here with. The main reference in identification of these species is Levy's good book of 1985. Previous records and their references are listed in my list of Egyptian spiders (1990, pp.39-41).
[PR = Previous record(s), NR = New record(s)]

A. Genus *Runcinia* Simon, 1875

Runcinia lateralis (C.L.Koch, 1838)

PR: Alexandria

NR: El-Arish [1♂; 24.X.1985; Col. Dr.H.Fadl]

El-Bawitti (40 km from it), El-Baharia Oases [1♂, 1♀, 3juv;
1-3.X.1986; Col.Dr.H.Fadl]

Kom Osheem [1♀, 6♂♂, 39juv; 17.V.1991; Col. H.El-Hennawy]

?Fatira, Kom Ombo [1♂, 1juv; 3.VIII.1991; Col. Dr.H.Fadl]

B. Genus *Synema* Simon, 1864

Synema diana (Audouin, 1825)

PR: Cairo to Luxor, Siwa Oasis (Siwa, Zeitoun, Girba), Wadi Natron

NR: Ras El-Barr [2♂♂, 6♀♀, 2♂♂, 1♀, 4juv; VIII.1981;

Col. H.El-Hennawy]

Kom Osheem [2juv; 9.XI.1984; Col. H.El-Hennawy]

Fatira, Kom Ombo [1♂; 20-27.I.1985; Col. Dr.H.Fadl]

C. Genus *Thomisus* Walckenaer, 1805

Thomisus bidentatus Kulczyński, 1901

PR: Sinai (Nuweiba near the Red Sea (El-Aqaba Gulf), and mountains
around St.Katharina Monastery) (Levy, 1985: p.42)

NR: El-Arish [1♂; 24.X.1985; Col. Dr.H.Fadl]

Thomisus onustus Walckenaer, 1805

PR: Siwa Oasis (Siwa, El Arig)

NR: Baheyi El-Din, 40 km from Siwa [4♂♂, 1♀, 3juv; 19.VIII.1989;
Col. Dr.H.Fadl]

Wadi El-Raiyan, 65 km southwest El-Fayum [1juv; 9.VI.1990;
Col. H.El-Hennawy]

Kom Osheem [1♂, 1♀; 17.V.1991; Col. H.El-Hennawy]

Ras El-Barr [1♀; 15.VIII.1991; Col. H.El-Hennawy]

Thomisus spinifer Cambridge, 1872

PR: Assuan, Cairo to Luxor, Sinai?, Siwa Oasis (Siwa, Zeitoun),
Wadi Natron (Bir Hooker)

NR: Fatira, Kom Ombo [1♂; 20-27.I.1985; 6♂, 1♀, 2sq, 2juv;
3.VIII.1991; Col. Dr.H.Fadl]
El-Arish [1♂, 1juv; 24.X.1985; Col. Dr.H.Fadl]
El-Bawitti (40 km from it), El-Baharia Oases [2♂♂, 2♀♀, 2sd♂, 2sq;
1-3.X.1986; Col. Dr.H.Fadl]
Baheyi El-Din, 40 km from Siwa [1♂, 1♀, 3juv; 19.VIII.1989;
Col. Dr.H.Fadl]
Heliopolis, Cairo [1♀, with egg sac; 6.V.1991;
Col. Mr.Kamal El-Din El-Hennawy]
(About 130 spiderlings emerged from the egg sac on May 14th)

(Note: T.spinifer is not preoccupied as stated by Levy (1985, p.39)
because T.spinifer Blackwall, 1862 is now: Misumena spinifera
(Blackwall, 1862). Therefore, T.citrinellus Simon, 1875 is a
synonym to T.spinifer O.P.-Cambridge, 1872.)

D. Genus Xysticus C.L.Koch, 1835

Xysticus lalandii (Audouin, 1825)

PR: Sinai (Southwestern Sinai)

NR: Hadayeq Zeinhum, Cairo [1♀; 25.IV.1983; Col. H.El-Hennawy]

Acknowledgments

I am indebted to my dear friend Dr. Hassan Fadl for assisting in my research with invaluable specimens from different regions in Egypt; to my father Mr. Kamal El-Din El-Hennawy for collecting a beautiful Thomisus spinifer with her egg sac from his home garden.

References

- El-Hennawy, H.K. 1990
Annotated Checklist of Egyptian Spider Species
(Arachnida : Araneae).
SERKET, 1(4-5): 1-49.
Levy, G. 1985
Fauna Palaestina. Arachnida II. Araneae: Thomisidae.
Jerusalem. 115pp., 169 figs., 1pl.

Stegodyphus pacificus Pocock, 1900
(Araneida : Eresidae)
A New Record from Jordan

Hisham K. El-Hennawy
41, El-Manteqa El-Rabia St., Heliopolis, Cairo.

On September 27th 1987, during a trip to Azraq Oasis (about 36 49 E 31 48 N), about 120 km from Amman (Jordan), I had found a female Stegodyphus with an egg sac inside her nest on a Pomegranate tree (Punica granatum) in a small farm. That farm is in the area called "Azraq El-Drooz" or the northern Azraq.

Biological Note. This female Stegodyphus lived in captivity (in Cairo) until 19th October 1987. About 150 spiderlings emerged from the egg sac on October 7th and began to feed on their mother's body on October 18th. They began their first moult on October 20th, to obtain a greyish colour instead of the orange colour of the offsprings. Their size became smaller too. Unfortunately, no one of them lived until maturity.

Description. This female Stegodyphus was generally white in colour. The cephalothorax, chelicerae and legs are covered with white hairs. The "face" or triangular frontal eye field with light orange hairs forming two separate triangles surrounding right and left median eyes (AME & PME). Legs: All tarsi (of pedipalps too) from below and distal part of metatarsi are covered with black hairs. Tibia I with two conspicuous ventral dark zones covered with black hairs. Tibiae II and IV with similar zones, but less in density, of black hairs (only a few on tibia IV). Abdomen dorsally white with yellowish hairs on both sides.

Measurements (in millimeters):

Total length 14.2 (dry specimen)

Cephalothorax Length 8.84, Width (anteriorly) 3.94, (maximum) 5.71

Eyes: diameter AME 0.27, PME 0.31

width AME 0.75, PME 1.02, ALE 3.06, PLE 2.69

Legs:	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
I	7.21	3.26	4.08	4.76	2.58	21.89
II	5.03	2.58	2.72	2.99	1.77	15.09
III	4.08	2.18	1.90	2.04	1.36	11.56
IV	4.76	2.45	3.40	3.13	1.50	15.24

Comparing this female Stegodyphus with Egyptian S. dufouri (Audouin, 1825) and an Indian S. pacificus Pocock, 1900, with reference to the great work of Kraus & Kraus (1988), this specimen is identified as S. pacificus.

The following ratios are listed below to facilitate comparison with those of Kraus & Kraus (1988, p. 199).

Cephalothorax length	:	Width anteriorly (Pars cephalica)	2.24
-----	:	---	(maximum) 1.55
Eye diameter	PME : AME		1.13
Width	PME : AME		1.36
---	PLE : ALE %		88%
Relative length of legs	144 : 99 : 76 : 100		
Length leg I	:	Length of cephalothorax	2.48

This record of Stegodyphus pacificus from Jordan is the first record west of Iran, Pakistan and India where this species exists. Its egg laying and egg hatching seasons in late September are only 1-2 months earlier than those of S. dufouri in Egypt.

Reference

- Kraus, O. & Kraus, M. 1988
 The genus Stegodyphus (Arachnida, Araneae), Sibling species, species groups, and parallel origin of social living.
 Verh. naturwiss. Ver. Hamburg, (NF) 30: 151-254, 266 figs.,
 3 pls., 12 maps, 7 tables.

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The editor: Hisham K. El-Hennawy
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Heliopolis, Cairo 11341, Egypt.

**A catalogue of the scorpions described from the
Arab countries (1758-1990)**
(Arachnida : Scorpionida)

Hisham K. El-Hennawy
41, El-Manteqa El-Rabia St., Heliopolis, Cairo.

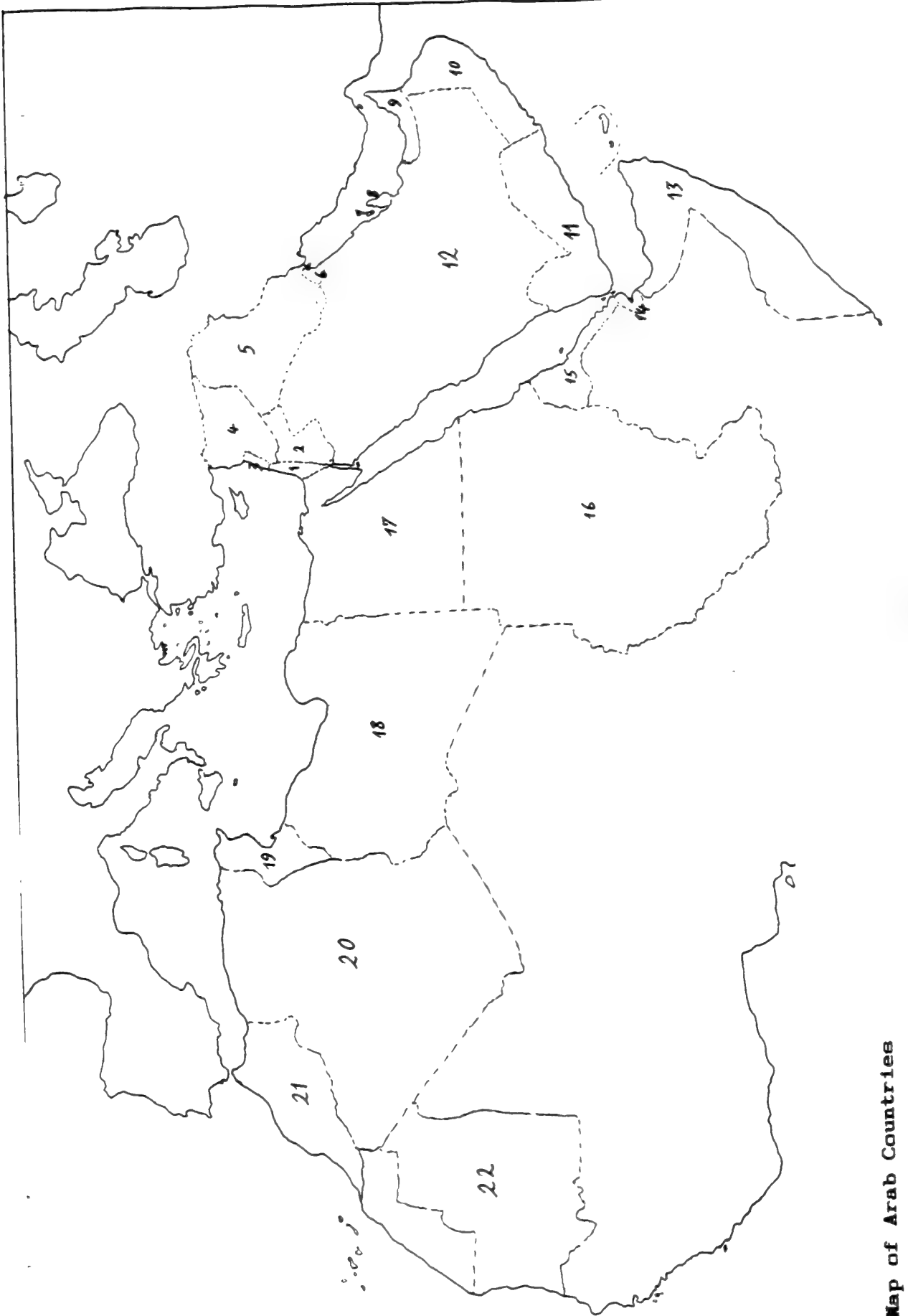
Introduction

The study of scorpion fauna in any country needs, beside the basic knowledge of scorpion morphology, to have a key to species and a list of recorded species from that country. The basic knowledge of different topics of scorpion study can be obtained from Polis "The Biology of Scorpions" (1990). The key to species is not possible without the examination of many specimens of all recorded species. Therefore, I had only prepared a key to genera, modified from Sissom (1990) and my key to families (1990). The user of this key must refer to Sissom's chapter (1990) to understand terminology and to compare figures of different structures.

The list of species and the catalogue presented here for the scorpion species of Arab countries are based mainly on the works of Vachon (1952 & 1966), Lamoral & Reynders (1975), and Vachon & Kinzelbach (1987) in addition to other works listed in the references section. The bibliography of Lacroix (1989) was consulted with those works for more verification. The references which were not seen are not marked by an asterisk. The authorship and date of publication of different taxa were taken mainly from Francke's Conspectus (1985). All the taxa are arranged alphabetically within 3 superfamilies and 5 families. [Buthoidea : Buthidae; Scorpionoidea : Diplocentridae, Ischnuridae, Scorpionidae; Vaejovoidea : Chactidae].

I hope this work will be useful to scorpologists who are interested in studying scorpions in the Arab countries.

This work is dedicated to the memory of the great arachnologist, the late Prof.Dr. MAX VACHON, who studied the scorpions of many of the Arab countries, beside his other great efforts in the field of Arachnology.



Map of Arab Countries

Algeria	20;	Jibuti	14;	Morocco	21;	Sudan	16;
Bahrain	7;	Jordan	2;	Oman	10;	Syria	4;
Egypt	17;	Kuwait	6;	Palestine	1;	Tunisia	19;
Emirates	9;	Lebanon	3;	Qatar	8;	Yemen	11;
Eritrea	15;	Libya	18;	Saudi Arabia	12;		
Iraq	5;	Mauritania	22;	Somalia	13;		

List of Species with their Distribution in Arab Countries

African Arab Countries

Abbreviations:

E = Egypt; L = Libya; T = Tunisia; A = Algeria; Mo = Morocco;
 Mu = Mauritania; Su = Sudan; So = Somalia; J = Jibuti; Er = Eritrea.

	E	L	T	A	Mo	Mu	Su	So	J	Er
Family Buthidae										
Genus Androctonus										
<u>Androctonus amoreuxi</u>	X	X	X	X	X	X	X			
<u>Androctonus a. hebraeus</u>	X									
<u>Androctonus australis</u>	X	X	X	X		X	X	X		
<u>Androctonus a. hector</u>			X	X						
<u>Androctonus bicolor</u>	X	X	X	X						X
<u>Androctonus b. aeneas</u>	X	X	X	X						
<u>Androctonus b. liouvillei</u>				X	X					
<u>Androctonus b. longecarinatus</u>		X								
<u>Androctonus crassicauda</u>	X									
<u>Androctonus c. gonneti</u>					X	X				
<u>Androctonus hoggarensis</u>				X						
<u>Androctonus mauretanicus</u>					X					
<u>Androctonus m. bourdoni</u>					X					
<u>Androctonus sergenti</u>					X					
Genus Babycurus										
<u>Babycurus crassimanus</u>									X	
<u>Babycurus johnstonii ochraceus</u>									X	
<u>Babycurus patrizii</u>									X	
<u>Babycurus somalicus</u>									X	
<u>Babycurus subpunctatus</u>									X	
<u>Babycurus taramassoi</u>									X	
<u>Babycurus zambonellii</u>										X
Genus Buthacus										
<u>Buthacus arenicola</u>	X	X	X	X						
<u>Buthacus a. spatzi</u>			X	X						
<u>Buthacus claviceps</u>								X		
<u>Buthacus foleyi</u>		X		X						
<u>Buthacus frontalis</u>										X
<u>Buthacus leptochelys</u>	X	X		X	X	X	X			X
<u>Buthacus l. granosus</u>							X			
<u>Buthacus l. occidentalis</u>						X				
<u>Buthacus spatzi</u>			X	X						
Genus Butheoloides										
<u>Butheoloides maroccanus</u>					X	X				
Genus Butheolus										
Subgenus Nanobuthus										
<u>Butheolus (Nanobuthus) andersoni</u>							X		X	
Subgenus Neobuthus										
<u>Butheolus (Neobuthus) berberensis</u>								X		X
Genus Buthiscus										
<u>Buthiscus bicalcaratus</u>			X	X						

Buthotus conspersus
Buthotus eminii
Buthotus franzwernerii
Buthotus f. gentili
Buthotus fuscitruncus
Buthotus hottentota
Buthotus minax
Buthotus m. niloticus
Buthotus m. tigrinus
Buthotus polystictus
Buthotus scaber
Buthotus syrticus
Buthotus trilineatus
Buthotus t. fuscatus

Buthus atlantis
Buthus a. parroti
Buthus barbouri
Buthus insolitus
Buthus maroccanus
Buthus occitanus
Buthus o. barcaeus
Buthus o. berberensis
Buthus o. israelis
Buthus o. malhommei
Buthus o. mardochei
Buthus o. paris
Buthus o. tunetanus
Buthus o. zeylensis

Cicileus exilis

Compsobuthus acutecarinatus
Compsobuthus a. abyssinicus
Compsobuthus a. maindroni
Compsobuthus berlandi
Compsobuthus wernerii
Compsobuthus w. klaptoczi
Compsobuthus w. longipalpis

Isometrus maculatus

Leiurus quinquestriatus
Leiurus q. voelschowi

Lissothus bernardi
Lissothus occidentalis

Lychas asper obscurus
Lychas obsti

Genus Microbuthus					
<u>Microbuthus fagei</u>				X	
<u>Microbuthus litoralis</u>					X X
<u>Microbuthus pusillus</u>					X
Genus Odonturus					
<u>Odonturus dentatus</u>					X
Genus Orthochirus					
<u>Orthochirus aristidis</u>	X				X X
<u>Orthochirus innesi</u>	X	X	X	X	X
<u>Orthochirus scrobiculosus</u>	X				
<u>Orthochirus s. negebensis</u>	X				
<u>Orthochirus seurati</u>				X	
Genus Parabuthus					
<u>Parabuthus granimanus</u>					X X X
<u>Parabuthus heterurus</u>					X
<u>Parabuthus h. stefaninii</u>					X
<u>Parabuthus hunteri</u>	X			X	
<u>Parabuthus liosoma</u>	X			X	X X
<u>Parabuthus l. abyssinicus</u>					X X
<u>Parabuthus l. dmitrievi</u>					X
<u>Parabuthus mixtus</u>					X
<u>Parabuthus m. obscurior</u>					X
<u>Parabuthus pallidus</u>					X X
<u>Parabuthus zavattarii</u>					X
Genus Uroplectes					
<u>Uroplectes carinatus</u>					X
<u>Uroplectes fischeri</u>					X X
<u>Uroplectes f. intermedius</u>					X
<u>Uroplectes patrizii</u>					X
<u>Uroplectes vittatus</u>					X
Family Chactidae					
Genus Euscorpius					
<u>Euscorpius carpathicus</u>	X?	X			
<u>Euscorpius c. sicanius</u>			X		
<u>Euscorpius flavicaudis algericus</u>				X	
<u>Euscorpius f. galitae</u>			X	X	
Subgenus Polytrichobothrius					
<u>Euscorpius (Polytrichobothrius) italicus</u>				X	
Family Diplocentridae					
Genus Nebo					
<u>Nebo hierichonticus</u>	X				
Family Scorpionidae					
Genus Hemiscorpius					
<u>Hemiscorpius socotranus</u>					X
<u>Hemiscorpius tellini</u>					X
Genus Opisthacanthus					
<u>Opisthacanthus asper</u>					X
<u>Opisthacanthus fischeri</u>					X

<u>Pandinus</u>	<u>boschisi</u>			X
	Subgenus Pandinoides			
<u>Pandinus</u>	(<u>Pandinoides</u>) <u>cavimanus</u>			X
<u>Pandinus</u>	(<u>Pandinoides</u>) <u>militaris</u>	X		X
<u>Pandinus</u>	(<u>Pandinoides</u>) <u>platycheles</u>			X
	Subgenus Pandinops			
<u>Pandinus</u>	(<u>Pandinops</u>) <u>colei</u>			X
<u>Pandinus</u>	(<u>Pandinops</u>) <u>hawkeri</u>			X
<u>Pandinus</u>	(<u>Pandinops</u>) <u>peeli</u>			X
<u>Pandinus</u>	(<u>Pandinops</u>) <u>pugilator</u>			X
	Subgenus Pandinurus			
<u>Pandinus</u>	(<u>Pandinurus</u>) <u>bellicosus</u>		X	X
<u>Pandinus</u>	(<u>Pandinurus</u>) <u>citernii</u>		X	
<u>Pandinus</u>	(<u>Pandinurus</u>) <u>exitialis</u>			X
<u>Pandinus</u>	(<u>Pandinurus</u>) <u>gregoryi</u>		X	
<u>Pandinus</u>	(<u>Pandinurus</u>) <u>magretti</u>	X		X
<u>Pandinus</u>	(<u>Pandinurus</u>) <u>meidensis</u>		X	
<u>Pandinus</u>	(<u>Pandinurus</u>) <u>pallidus</u>	X	X	
	Subgenus Pandinus			
<u>Pandinus</u>	(<u>Pandinus</u>) <u>imperator</u>			X
<u>Pandinus</u>	(<u>Pandinus</u>) <u>imperator subtypicus</u>	X		X
<u>Pandinus</u>	(<u>Pandinus</u>) <u>intermedius</u>			X
<u>Pandinus</u>	(<u>Pandinus</u>) <u>phillipsi</u>			X
<u>Pandinus</u>	(<u>Pandinus</u>) <u>smithi</u>			X

<u>Scorpio</u>	<u>maurus</u>	X		X	X		X
<u>Scorpio</u>	<u>m. behringsi</u>						X
<u>Scorpio</u>	<u>m. fuliginosus</u>						X
<u>Scorpio</u>	<u>m. hesperus</u>						X
<u>Scorpio</u>	<u>m. legionis</u>						X
<u>Scorpio</u>	<u>m. magadorensis</u>						X
<u>Scorpio</u>	<u>m. palmatus</u>	X	X		X		
<u>Scorpio</u>	<u>m. stemmleri</u>						X
<u>Scorpio</u>	<u>m. subtypicus</u>						X
<u>Scorpio</u>	<u>m. tunetanus</u>			X	X	X	X
<u>Scorpio</u>	<u>m. weidholzi</u>						X

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P = Palestine (Israel + Occupied lands); J = Jordan; L = Lebanon;
S = Syria; I = Iraq; K = Kuwait; Q = Qatar; B = Bahrain; E = Emirates;
O = Oman; Y = Yemen (North & South); Sa = Saudi Arabia.

	P	J	L	S	I	K	Q	B	E	O	Y	Sa
Family Buthidae												
Genus Androctonus												
<u>Androctonus amoreuxi</u>		X										X
<u>Androctonus a. hebraeus</u>	X	X	X	X								
<u>Androctonus australis</u>	X											
<u>Androctonus bicolor</u>	X	X	X	X								
<u>Androctonus crassicauda</u>	X	X	X	X	X	X	X	X	X	X	X	X
Genus Apistobuthus												
<u>Apistobuthus pterygocercus</u>							X		X	X	X	X
Genus Birulatus												
<u>Birulatus haasi</u>		X										
Genus Buthacus												
<u>Buthacus leptochelys</u>	X	X	X	X	X	X	X	X	X			X
<u>Buthacus tadmoresis</u>	X			X	X							
<u>Buthacus t. nigroaculeatus</u>							X	X	X			X
<u>Buthacus t. yotvatensis</u>	X	X		X	X							
Genus Butheolus												
<u>Butheolus gallagheri</u>										X		
<u>Butheolus thalassinus</u>											X	
Genus Buthotus												
<u>Buthotus hottentota</u>											X	
<u>Buthotus jayakari</u>									X	X	X	X
<u>Buthotus j. salei</u>										X		
<u>Buthotus judaicus</u>	X	X	X	X								
<u>Buthotus saulcyi</u>				X	X							
<u>Buthotus scaber</u>					X						X	
<u>Buthotus schach</u>					X							
Genus Buthus												
<u>Buthus occitanus</u>		X	X									
<u>Buthus o. israelis</u>	X											
Genus Compsobuthus												
<u>Compsobuthus acutecarinatus</u>				X	X						X	X
<u>Compsobuthus a. arabicus</u>							X		X			X
<u>Compsobuthus a. brevimanus</u>					X						X	
<u>Compsobuthus a. jordanensis</u>		X		X								
<u>Compsobuthus a. maindroni</u>										X		
<u>Compsobuthus a. matthiesseni</u>					X							
<u>Compsobuthus manzonii</u>											X	
<u>Compsobuthus wernerii</u>	X	X	X	X	X							X
<u>Compsobuthus w. carmelitis</u>	X											
<u>Compsobuthus w. judaicus</u>	X		X		X							
<u>Compsobuthus w. longipalpis</u>	X	X										
Genus Leiurus												
<u>Leiurus quinquestriatus</u>	X	X	X	X			X		X		X	X
<u>Leiurus q. brachycentrus</u>												X
<u>Leiurus q. hebraeus</u>	X											
<u>Leiurus q. voelschowi</u>	X											
Genus Mesobuthus												
<u>Mesobuthus sp?</u>				X								
<u>Mesobuthus caucasicus</u>					X							
<u>Mesobuthus eupeus</u>				X	X							
<u>Mesobuthus e. mesopotamicus</u>					X							
<u>Mesobuthus gibbosus</u>			X	X								

P J L S I K Q B E O Y Sa

Genus Microbuthus										
<u>Microbuthus pusillus</u>										X
Genus Odontobuthus										
<u>Odontobuthus doriae</u>					X					
Genus Orthochirus										
<u>Orthochirus innesi</u>	X	X	X	X	X	X	X			X
<u>Orthochirus persa</u>					X					X
<u>Orthochirus scrobiculosus</u>					X					
<u>Orthochirus s. mesopotamicus</u>					X					
<u>Orthochirus s. negebensis</u>	X	X								
Genus Parabuthus										
<u>Parabuthus granimanus</u>										X
<u>Parabuthus liosoma</u>										X X
Genus Vachoniolus										
<u>Vachoniolus globimanus</u>								X		
<u>Vachoniolus minipectenibus</u>										X
Family Chactidae										
Genus Euscorpius										
<u>Euscorpius germanus</u>					X					
Subgenus Polytrichobothrius										
<u>Euscorpius (Polytrichobothrius) italicus</u>										X?
Family Diplocentridae										
Genus Heteronebo										
<u>Heteronebo forbesi</u>										X
<u>Heteronebo granti</u>										X
Genus Nebo										
<u>Nebo flavipes</u>					X?			X	X	
<u>Nebo franckeii</u>								X		
<u>Nebo grandis</u>									X	
<u>Nebo hierichonticus</u>	X	X	X	X				X	X	X
<u>Nebo omanensis</u>								X		
<u>Nebo whitei</u>								X		
<u>Nebo yemenensis</u>									X	
Family Scorpionidae										
Genus Hemiscorpius										
<u>Hemiscorpius arabicus</u>								X	X	X
<u>Hemiscorpius lepturus</u>					X					
<u>Hemiscorpius maindroni</u>								X		
Genus Pandinus										
Subgenus Pandinurus										
<u>Pandinus (Pandinurus) arabicus</u>									X	X?
<u>Pandinus (Pandinurus) exitialis</u>										X
<u>Pandinus (Pandinurus) percivali</u>										X
Genus Scorpio										
<u>Scorpio maurus</u>		X	X							
<u>Scorpio maurus arabicus</u>										X
<u>Scorpio maurus berytensis</u>				X						
<u>Scorpio maurus fuscus</u>	X	X	X	X	X					X

	P	J	L	S	I	K	Q	B	E	O	Y	Sa
<u>Scorpio maurus kruglovi</u>		X		X	X	X	X					X
<u>Scorpio maurus palmatus</u>	X	X										
<u>Scorpio maurus propinquus</u>	X			X								
<u>Scorpio maurus testaceus</u>					X							
<u>Scorpio maurus yemenensis</u>												X

KEY TO GENERA

1. Trichobothriotaxy : Pedipalpal Femur : 11 [4 internal (rarely 5)]
 (Type A) (exceptionally 9, 10, 12, 14)
 Tibia : 13 [none ventral]
 Hand : 8 (exceptionally 7)
 Fixed Finger : 7

Family Buthidae 7
- . Trichobothriotaxy : Pedipalpal Femur : 3 [1 dorsal, 1 external]
 (Type C) (exceptionally 4)
 Tibia : >18 [1-3 ventral]
 Hand : >15
 Fixed Finger : >9 [4 dorsal] 2
2. Three trichobothria present on ventral side of pedipalp-chela
 manus adajacent to base of movable finger; Cheliceral movable
 finger with 2 subdistal external teeth **Family Chactidae**
- . Always 2 trichobothria present on ventral side of pedipalp-chela
 manus adajacent to base of movable finger; Cheliceral movable
 finger with only 1 subdistal external tooth 3

Buscorpius
3. Subaculear tubercle present **Family Diplocentridae** 3'
- 3'. Pedipalp-chela trichobothrium (it) situated in distal half of
 fixed finger; Subaculear tubercle often fingerlike and narrow
 at base **Nebo**
- . Pedipalp-chela trichobothrium (it) situated basally on fixed
 finger; Subaculear tubercle rounded and broad at the base

Heteronebo
- . Subaculear tubercle absent 4
4. Lateroapical margin of tarsi straight **Family Ischnuridae**
- . Lateroapical margin of tarsi produced into a rounded lobe; or if
 margin straight (**Hemiscorpius**), then the metasoma bears a single
 ventromedian carina and the carapace has three pairs of lateral
 eyes **Opisthacanthus**
5. Metasomal segments I-IV with a single ventral submedian carina;
 Pedipalp tibia with 13 trichobothria on external surface **Family Scorpionidae** 5
- . Metasomal segments I-IV with paired ventral submedian carinae **Hemiscorpius** 6
6. Stridulatory organ located on opposing surfaces of the coxae of
 the pedipalps and first pair of legs; Pedipalp chela with more
 than 26 trichobothria and/or tibia with more than 13 trichobo-
 thria on the external surface **Pandinus**
- . No stridulatory organ on the coxae of the pedipalps and first
 pair of legs; Pedipalp tibia with 19 trichobothria, 13 of which
 are on the external surface **Scorpio**

Family Buthidae

7. Angle formed by trichobothria d1, d3, and d4 opens toward external face of pedipalp femur (<); Legs III and IV with tibial spurs 7'
- 7'. Sternum subpentagonal; Telson with distinct subaculear tubercle; Carapace granular, but lacking distinct carinae Butheoloides 7"
- . Sternum subtriangular
- 7". Ventral side of cheliceral fixed finger smooth, lacking nodules or denticles Uroplectes
- . Ventral side of cheliceral fixed finger with 1 or 2 denticles; Telson without distinct subaculear tubercle Parabuthus
- . Angle formed by trichobothria d1, d3, and d4 opens toward internal face of pedipalp femur (>) 8
8. Legs without tibial spurs 8'
- 8'. Tibia and tarsomeres of legs I-III with retrolateral row of long curved setae (bristlecombs) Vachoniolus
- . Tibia and tarsomeres of legs I-III with setae not arranged into a bristlecomb Isometrus
- . Legs III and/or IV with tibial spurs 9
9. Tibial spurs present only on leg IV 9'
- 9'. Pedipalp femur with 3 external trichobothria Buthiscus
- . Pedipalp femur with 2 external trichobothria Babycurus
- . Tibial spurs present on both legs III and IV, or if present only on leg IV, then the second metasomal segment is much wider than the other metasomal segments 10
10. Dentate margin of pedipalp-chela movable finger with granules indistinct, not divided into rows, and limited to distal half of finger 10'
- 10'. Carapace heavily granulated; Metasomal segment V punctate Microbuthus
- . Carapace smooth; Metasomal segment V not punctate Lissothus
- . Dentate margin of pedipalp-chela movable finger with granules distinct, divided into rows, and occurring along the finger 11
11. Carapace, in lateral view, with a distinct downward slope from median eyes to anterior margin; Small scorpions (less than 30 mm long) 11'
- 11'. Carapace, tergites, sternites, and metasoma set with very dense, rounded granules producing a beaded appearance; Tergites I-VI with 3 carinae, each extending posteriorly into a sharp point; Metasomal segments I-IV without carinae Birulatus
- . Carapace, tergites, sternites, and metasoma often granular, but not as above; Tergites I-VI with or without carinae, but if present never extending past margin of tergite; Metasomal segments I-IV carinate 11"
- 11". Metasomal segment V punctate; Trichobothrium d2 of pedipalp femur usually absent Orthochirus
- . Metasomal segment V not punctate; Trichobothrium d2 of pedipalp femur present Butheolus
- . Carapace, in lateral view, with entire dorsal surface horizontal, or nearly so (possibly with slight anterior downward slope); Size variable 12
12. Cheliceral fixed finger with a single ventral denticle; Telson with distinct subaculear tubercle Lychas
- . Cheliceral fixed finger with 2 ventral denticles 13

13. Metasomal segment II widely flared, much wider than other metasomal segments Apistobuthus
- . Metasomal segment II similar in width to other metasomal segments 14
14. First 2 tergites with 5 carinae, the posterior ones with at least 3 Leiurus
- . Anterior tergites without carinae, or with 1 to 3 carinae 15
15. Carapace granular but lacking distinct carinae Buthacus
- . Carapace with distinct carinae 16
16. Tergites I-VI with a single median carina, present at least on posterior segments; Telson with denticulate subaculear tubercle Odonturus
- . Tergites I-VI with 3 carinae (may be weak or obsolete on anterior tergites); Telson with at most a subtle protuberance under aculeus rarely with a pronounced tooth 17
17. Pedipalp-chela movable finger with 2 distal internal granules located just proximal to terminal denticle, flanked laterally by a row of 5 to 7 smaller granules Odontobuthus
- . Pedipalp-chela movable finger with 3 or 4 distal granules located just proximal to terminal denticle; First row of smaller granules situated proximally to these 18
18. 4 granules on pedipalp-chela movable finger, just proximal to terminal denticle 18'
- 18'. Central lateral and posterior lateral carapacial carinae joined, forming a continuous linear series of granules to posterior margin Compsobuthus
- . Central lateral and posterior lateral carapacial carinae not joined as above, usually separated by a small gap, with central lateral carinae continuing distally beyond origin of posterior laterals 18''
- 18''. Tarsomeres I and II bearing setae on ventral side; Pedipalp chela very slender, with long, upwardly curved fingers; Movable finger well over twice as long as underhand Cicileus
- . Tarsomeres I and II with paired spines ventrally; Pedipalp chela not as slender, with shorter fingers; Movable finger less than twice as long as underhand (usually less than 1.5 times as long) 18'''
- 18''' Ventrolateral carinae of metasomal segment V with posterior granules enlarged, often lobate; Central, lateral, and posterior median carapacial carinae joined, forming a lyre-shaped configuration Mesobuthus
- . Ventrolateral carinae of metasomal segment V with all granules more or less equal in size, never lobate; Carapacial carinae not forming a lyre-shaped configuration Buthotus
- . 3 granules on pedipalp-chela movable finger, just proximal to terminal denticle 19
19. Central, lateral, and posterior median carapacial carinae joined, forming a lyre-shaped configuration; Metasoma with all segments more or less equal in width and depth; Metasomal segment IV with weakly developed dorsolateral carinae Buthus
- . Central, lateral, and posterior median carapacial carinae not joined as above; Metasomal segments robust, increasing in width and depth posteriorly; Metasomal segment IV with well-developed granulate dorsolateral carinae Androctonus

Catalogue of scorpion species of the Arab countries

Superfamily Buthoidea

Family Buthidae Simon, 1879

Genus *Androctonus* Hemprich & Ehrenberg, 1829*Androctonus amoreuxi* (Audouin, 1825)

Scorpio a. Audouin, 1825: pp.173-174, pl.8, fig.2; ? EGYPT & SYRIA.
RECORDS:

Scorpio a.; Audouin, 1827: pp.411-412, pl.8, fig.2; ? EGYPT & SYRIA.

Prionurus citrinus Hemprich & Ehrenberg, 1829: 356, no.6, pl.ii, fig.2;
Upper EGYPT. Dongola, SUDAN.

Prionurus citrinus; Pocock, 1895: 306-307; Cairo; Amarna; S.W. Bank of
Suez Canal; Fayum; Assouan, EGYPT. Wadi-Halfa, SUDAN.

Buthus deserticola Birula, 1903: 109-110; S. ALGERIA.

Buthus a.; Simon, 1910: 66; Suez; Fayoum; Assouan, EGYPT. Wadi-Halfa;
Dongola, SUDAN.

Buthus a.; Borelli, 1914: 153; Socna, LIBYA.

Buthus a. deserticola; Borelli, 1927: 348-350; Giarabub; Sokna
(Tripoli), LIBYA.

Buthus australis citrina; Gough & Hirst, 1927: 4; Baharia Oasis; Siwa
Oasis; Sollum; Ismailia; Nefiche; Kafr Amar; Ein Shams (Cairo);
Helwan; Tamia; Edku; Sakkarah; Beltim; Sheik Fadl (West of Ayat);
east end of Lake Fayum; Asswan, EGYPT. Wadi Halfa, SUDAN.
Madina, SAUDI ARABIA.

Buthus (*Prionurus*) a.; Birula, 1928: 80; Taragaia;
N. Kordofan, SUDAN. Mokattamwüste, S. EGYPT.

Prionurus deserticola; Pallary, 1929: 140; El Golea; Fort Miribel
(Sahara septentr.), ALGERIA.

Prionurus australis a.; Caporiacco, 1932b: 397-399; Cufra; El Talab;
et Tag; el Hauuari; El Mzeima; El Hasseiat; Augila; Gialo;
Agedabia; Murzuk; Gath; Auenat, Fezzan, LIBYA.

Prionurus australis a.; Caporiacco, 1936b: 94, 98; Cufra; el-Giof;
et Tag'; et-Tallab; Gialo, LIBYA.

Prionurus australis a.; Caporiacco, 1937a: 342-343; Gat; El Barkat;
Tunin; Serdeles; Uadi Tanezzuft, Bir Tahala; Murzuk; Umm el
Araneb; Gatrui; Uesc-ca, Gebel es Soda; Bir Tescena, Giofra;
Gheriat e Mizda; es-Sahabi e Uadi el Faregh,, LIBYA.

Buthus (*Prionurus*) a.; Roewer, 1943: 206; Wadi Halfa, SUDAN.

Buthus (*Prionurus*) *australis* a.; Whittick, 1947: 121-122; south Siwa,
EGYPT. SUDAN. Giarabub; Cufra; Gialo; Fezzan, LIBYA. ALGERIA.
TUNISIA.

A.a.; Vachon, 1952a: 169-178, figs.202, 215-220, 223-228; Sebha;
Ghreifa; Ghat; Bendbeia; Brak; El Barka; Oubari, (Fezzan) LIBYA.
Beni Abbes; Beni Ounif; Colomb-Bechar; Timimoun; Reggan; Adrar;
El Abiodh Sidi Cheikh; Ourgata; In Salah; El Golea; Tindouf;
Tabelbala, ALGERIA. Tiznit; Goulimine; Akka; Tata; Tarda;
Goulimina; Foum Zguid; Assa; Zagora, MOROCCO. Tiaraje; Trarza;
Mederdra; Tichitt, MAURITANIA.

- A.a.; Vachon, 1953: 1013-1015, fig.1; Fort Trinquet; Fort Gouraud; Atar; Chinguetti; Akjoujt; Nouakchott; west of Rkiz lake; Dagana; pays Trarza; Mederdra; Tichitt, MAURITANIA.
 A.a.; Vachon, 1966: 209; EGYPT.
 A.a.a.; Kinzelbach, 1985: LIBYA. SUDAN. EGYPT.
 A.a.; El-Hennawy, 1988a: 16; North-western part, west of Amman, JORDAN.
 A.a.; Amr et al, 1988: 373-374; West of JORDAN.
 A.a.; El-Hennawy, 1991: 86-87; Wadi El-Raiyan, south-west of El-Fayum, EGYPT.

Androctonus amoreuxi hebraeus (Werner, 1935)

Buthus (Hottentota) h. Werner, 1935: 212; PALESTINE.

RECORDS:

- A.a.h.; Vachon, 1966: 209; PALESTINE.
 A.a.h.; Levy & Amitai, 1980: 42-46, figs.43-46, map 2; Coastal plain from 'Akko to Gaza; Be'er Sheva; 'En Gedi, PALESTINE. Western shores from Qantara to Abu Rudeis, Sinai, EGYPT.
 A.a.h.; Kinzelbach, 1985: EGYPT. PALESTINE. JORDAN. LEBANON. SYRIA.

Androctonus australis (Linnaeus, 1758)

Scorpio a. Linnaeus, 1758: 624-625.

RECORDS:

- Prionurus libycus Hemprich & Ehrenberg, 1829: 357, no.8, pl.ii, fig.1; between Alexandria and Siwa; mountains of Sinai, EGYPT.
 A.funestus; Lucas, 1849: 271; Province d'Oran, ALGERIA.
 Buthus funestus & B.lybicus; Koch, 1875: 7; Cairo, EGYPT.
 A.a.; Pavesi, 1895a: 38; Obbia, SOMALIA.
 Prionurus libycus; Pocock, 1895: 306; Mersa Matroo; near Pyramids, Giza; Abbasiyeh, Cairo, EGYPT. Algier; Biskra; Tuggurt, ALGERIA. Tunis; Duirot, TUNIS.
 Buthus a.priamus; Werner, 1902: 595-596; from Biskra until Tuggurth, ALGERIA.
 Buthus a.; Tullgren, 1909: 2; Sinai, EGYPT.
 Buthus a.libycus; Simon, 1910: 64-65, fig.7; Lower Egypt; Sinai, EGYPT.
 Buthus a.a.; Borelli, 1914: 150-151; Misurata; Valle Zigar (Gebel Soda), LIBYA.
 Buthus a.priamus; Borelli, 1914: 151-152; Homs; Azizia; Gharian, LIBYA.
 Buthus a.libycus; Borelli, 1914: 152-153; Bu-Ngein, between Fatumia and Socna, LIBYA.
 Buthus a.libycus; Borelli, 1927: 347; Porto Bardia; between Porto Bardia and Giarabub, LIBYA.
 Buthus a.libyca; Gough & Hirst, 1927: 4, fig.5; Mersa Matrouh; Sollum; east of Marg (near Cairo); Abbasseyeh (Cairo); Bir Victoria, Bir Hooker, Wadi Natrun; Gabel el Anqabiya (south of Cairo-Suez road), EGYPT. Gaza, PALESTINE.
 Buthus (Prionurus) a.diomedes; Giltay, 1929: 193-196; Hoggar; Tamanrasset; In Ouri, ALGERIA.
 Prionurus a. & P.funestus; Pallary, 1929: 140; Ameri; Tazerouk; Amguid (Tassili-n'-Ajjer), Hoggar, ALGERIA.
 Prionurus a.libycus; Caporiacco, 1932b: 399; El Agheila; Agedabia, LIBYA.
 Prionurus a., P.funestus & P.a.diomedes; Pallary, 1934: 98,99; Ameri; Tazerouk; Amguid (Tassili-n'-Ajjer), Hoggar; Tamanrasset; I-n-Ouri (Adrar des Ifor'as), ALGERIA.

Prionurus a. var flava; Pallary, 1934: 100; Trarza Mederdra, MAURITANIA
Prionurus a. a.; Caporiacco, 1937a: 343-344; Mellaha; Bir Gheddaia
 (Sirtica); Mizda; Sirte, LIBYA.

Buthus a.; Moriggi, 1941: 85; Obbia, SOMALIA.

A. a. a.; Vachon, 1966: 210; EGYPT.

A. a.; Levy & Amitai, 1980: 35-40, figs. 39-42, map 2; Western shores,
 area of Mitla Pass, and southern parts of eastern shores of
 Sinai, EGYPT.

A. a.; Kinzelbach, 1985: LIBYA. SUDAN. EGYPT.

Androctonus australis hector (C.L.Koch, 1839)

A. h. C.L.Koch, 1839: 6-8, pl. 181, fig. 433; North Africa.

RECORDS:

A. s. h.; Vachon, 1952a: 164-168, figs. 200, 201, 203-214, 221, 222; Ile
 Djerba; Mahares; between Sfax and Gabes; El Guettar; Oum Ali;
 Ile Kerkenna; Medenine; Douz; Matmata; Sousse; Gafsa; Tozeur;
 Nefta; Kebili; Maknassi, TUNISIA. El Oued; Touggourt; Oued Souf;
 Ghadames; Biskra; Ouargla; Ghardaia; Zenina; Ouled Djellal; Bou
 Saada; Djelfa; Messaad; Barika region; Chellala; Laghouat;
 Tibremt; Geryville; Bouktoub; Brezina; Noama; Tiout, near Ain
 Sefra; Ain Sefra; Mecheria, ALGERIA.

Androctonus bicolor Hemprich & Ehrenberg, 1829

A. b. Hemprich & Ehrenberg, 1829: 358, no. 9, pl. 11, fig. 4; LIBYA.

RECORDS:

Scorpio australis; Audouin, 1825: p. 174, pl. 8, fig. 3; ? EGYPT & SYRIA.

Scorpio australis; Audouin, 1827: p. 412, pl. 8, fig. 3; ? EGYPT & SYRIA.

A. b.; Lucas, 1849: 271, pl. 18, fig. 1; Near Oran, W. ALGERIA.

A. b.; Pavesi, 1885: 197; Assabe Massoua, ERITREA.

Prionurus bicolor; Pocock, 1895: 307-309; Cairo; Ramleh; Mandara;
 Aboukir; Mersa Matroo, EGYPT.

Buthus b.; Werner, 1902: 596; Tunis, TUNISIA. Biskra, ALGERIA.

Buthus b.; Tullgren, 1909: 2; Cairo, EGYPT.

Buthus b.; Simon, 1910: 66-67; Alexandria; Cairo, EGYPT.

Buthus b.; Borelli, 1927: 347-348; Porto Bardia, LIBYA.

Buthus b.; Gough & Hirst, 1927: 3, fig. 4; Mersa Matrouh; Alexandria;
 Aboukir; Hammam; Kafr Gamous; Ramleh; Cairo, EGYPT. Gaza,
 PALESTINE.

A. b.; Vachon, 1966: 210; EGYPT. PALESTINE. SYRIA.

A. b. b.; Levy & Amitai, 1980: 30-35, figs. 35-38, map 2; Coastal plain,
 northern Negev to foothills of Judea and to Jericho, PALESTINE.
 Bir Gifgafa; Qantara, N. Sinai, EGYPT. [p. 31; Beirut, LEBANON.]

A. b.; Kinzelbach, 1984: 99; Aqaba (Wadi east of the marine
 biological station; 14 km south of the city); Petra, JORDAN.
 Tal der Grabturme, Palmyra (Tadmur), SYRIA.

A. b. b.; Kinzelbach, 1985: EGYPT. PALESTINE. JORDAN. LEBANON. SYRIA.

A. b.; El-Hennawy, 1988a: 16; near Aqaba; Petra; North-western part,
 west of Amman, JORDAN.

A. b.; Moustafa, 1988: 61-64, 77, figs. 15, 32; Wadi Feiran, S. Sinai,
 EGYPT.

A. b.; Amr et al, 1988: 373; North-West of JORDAN.

Androctonus bicolor aeneas (C.L.Koch, 1839)

A. a. C.L.Koch, 1839b: 3-6, fig. 432; NORTH AFRICA.

RECORDS:

Buthus b. a.; Borelli, 1914: 154; Misurata; Homs, LIBYA.

- Prionurus* b.a.; Caporiacco, 1937a: 341; Tripoli; Mellaha; Bir Gheddaia (Sirtica); Sliten, LIBYA.
- A. aeneas* a.; Vachon, 1952a: 126-128, figs. 156, 157, 159-164; Sfax; Gafsa; Gabes; Sousse; Tozeur; Maknassi; Ile Djerba; El May (Ile Djerba); Djebel Oum Ali, near Tatahouine, TUNISIA. Chellala; Messaad; Taguine; Zenina; Ouled Djellal; Ghardaia; Laghouat; Bou Saada; Ouargla, ALGERIA.
- A. b. a.*; Levy & Amitai, 1980: 31; ALGERIA. TUNISIA.
- A. b. a.*; Kinzelbach, 1985: LIBYA. EGYPT.
- Androctonus bicolor liouvillei* (Pallary, 1924)
- Buthus* (*Prionurus*) l. Pallary, 1924: 221-222, figs. 3, 4; Bou Denib, Grand Atlas, Agadir, MOROCCO.
- RECORDS:
- A. aeneas* l.; Vachon, 1952a: 128-134, figs. 148, 149, 152, 158, 165; Oran; Beni Ounif; Geryville; Ain Sefra; Arbaouat (south of Geryville); Sidi Bel Abbes; Mahiridja, ALGERIA. Bou Denib; Tata; Chaouch Ahmed (near Tata); Assa (near Oued Draa); Goulmina (valley Oued Reris); Ouarzazate; Zagora; Oudjda, MOROCCO.
- A. b. l.*; Levy & Amitai, 1980: 31; MOROCCO.
- Androctonus bicolor longecarinatus* (Caporiacco, 1932)
- Prionurus* b.l.; Caporiacco, 1932b: 397; Agedabia; El Agheila; El Sahabi, LIBYA.
- RECORD:
- Prionurus* b.l.; Caporiacco, 1937a: 341-342; Agedabia, LIBYA.
- Androctonus crassicauda* (Olivier, 1807)
- Scorpio* c. Olivier, 1807: 97.
- RECORDS:
- Prionurus* c.; Pocock, 1895: 292; Hadramaut valley, YEMEN. Muscat, OMAN.
- Prionurus* c.; Penther, 1912: 110; Kal'at Shergat; Assur; Kajara; Mosul; Hsitsche (Heseke); Rakka; Urfa; Diarbekir; Mardin; Tez Charab; Cheibani; Bagdad, IRAK.
- A. c.*; Pringle, 1960: 74-75, fig. 1; Baghdad City; Dohuk; Tel Afar; Aqra; near Rutba (Syrian Desert); Ain al-Tamr; Baquba; Mosul City; Khanquin; Hilla; Badra; Basra; Nasirya, IRAQ.
- A. c.*; Khalaf, 1962: 1; Baghdad; Shergat; Gaiyara; Dohuk; Tal-Afar; Aqra; Rutba; Ain Al-Tamr; Baquba; Mosul; Khaniqin; Hilla; Badra; Basra; Nasirya; Balad; Amara; Sulaf; Rawa, IRAQ.
- A. c. c.*; Vachon, 1966: 210; ARABIA. PALESTINE. SYRIA. JORDAN. IRAK.
- A. c.*; Wahbeh, 1976: 89; Amman; Aqaba; Irbid; Mafraq; Wadi-Rum; Zarqa, JORDAN.
- A. c.*; Vachon, 1979: 31-34, figs. 1, 2, 4; Riyadh; Al Khardj; Riyadh-Dammam, km 85; Wadi Awsat; Harad; Wadi Usfahn (near Jeddah); Wadi Hanifa; Al Khubra; Jeddah; Torquam (Jeddah); Jebel Shafaf; Shaira; Buraiman (near Jeddah); Hawi; Khurma; Qunfidah; Medain Saleh; Rumaia; Khashm ath Thumani; NE Nariya; S Dharan, SAUDI ARABIA.
- A. c. c.*; Levy & Amitai, 1980: 23-29, figs. 30-34, map 2; Throughout PALESTINE. Sinai, EGYPT. Mosul, IRAQ. Palmyra; Homs; Damascus, SYRIA. Petra; Amman; Qasr Amra, JORDAN. Hadhramaut, YEMEN. Muscat, OMAN.
- A. australis*; Levy & Amitai, 1980: 36, 40; Jidda, SAUDI ARABIA. Hadhramaut, YEMEN. Muscat, OMAN. [BM(NH)]

- A.c.; Kinzelbach, 1984: 99; near Dar'a, SYRIA.
 A.c.; Kinzelbach, 1985: EGYPT. PALESTINE. JORDAN. LEBANON. SYRIA.
 IRAK. KUWAIT. QATAR. BAHRAIN. EMIRATES. SAUDI ARABIA.
 A.c.; El-Hennawy, 1988a: 17; Amman; Aqaba; Irbid; Mafraq; Wadi Rum;
 Zarqa; Qasr Amra; Petra; Shaumari Wildlife Reserve near Azraq,
 JORDAN.
 A.c.; Moustafa, 1988: 65-68, 77, figs. 16, 33; Wadi Feiran, S. Sinai,
 EGYPT.
 A.c.; Amr et al, 1988: 373; Aman; Qasr Amra; Aqaba, JORDAN.
 A.c.; Al-Safadi, In Press; Al-Marawi'ah; Al-Khukhah; Mukha; Wadi
 Al-Barh; Wadi Zabid; Bajil; Urg village; Al-Salief, YEMEN.
 KUWAIT. BAHRAIN. EMIRATES. OMAN. SAUDI ARABIA.

Androctonus crassicauda gonneti Vachon, 1948

A.c.g. Vachon, 1948a: 305; S. MOROCCO.

RECORDS:

- A.c.g.; Vachon, 1952a: 134-137, figs. 170-174; Oued Akka, west of
 Djebel Bani, MOROCCO.
 A.c.; Vachon, 1953: 1015-1016, fig. 2; Molomhar, 15 km N.-W. of Atar;
 Fort Trinquet, MAURITANIA.
 A.c.g.; Levy & Amitai, 1980: 24; Akka, southern MOROCCO. Molomhar;
 Fort Trinquet, MAURITANIA.

Androctonus hoggarensis (Pallary, 1929)

Prionurus h. Pallary, 1929: 136-139, figs. 1-2; Attaqor-n-Ahaggar,
 Hoggar, ALGERIA.

RECORDS:

- ♀ Prionurus eburneus Pallary, 1928: 348-349, figs. 2, 2a, 2b; Djanet,
 ALGERIA.
 Prionurus h.; Pallary, 1934: 94-96, figs. 3-4; Attaqor-n-Ahaggar;
 Ameri; Tamanrasset, Hoggar, ALGERIA.
 Prionurus australis scortecii Caporiacco, 1937a: 344-345; Gianet,
 in montibus, Tassili, ALGERIA.
 A.h.; Vachon, 1948b: 445-452, figs. 192-199; Tamanrasset, Hoggar
 Mountains, ALGERIA.
 A.h.; Vachon, 1952a: 150-157, figs. 148, 149, 152, 192-199; Tamanrasset,
 Hoggar; Djanet and Fort-Motylinisky, Pays Ajjer, ALGERIA.

Androctonus mauretanicus (Pocock, 1902)

Buthus m. Pocock, 1902: 373-374.

RECORD:

- A.m.m.; Vachon, 1952a: 137-143, figs. 175-180, 182, 186, 187; Casablanca;
 Rabat; Zaers forest near Rabat; Oued Akreuch (12 km south of
 Rabat); Mogador; Dianet (near Mogador); Fedhala; Camp-Marchand
 (south of Rabat); Azemmour; Sidi Ali (near Azemmour); Kasba
 Ouled Said (near Settati); Chaouia; Marrakech; Cap Ghir; Kasba
 Tadla; Amizmiz; near Asni; Sidi bou Rziguim, MOROCCO.

Androctonus mauretanicus bourdoni Vachon, 1948

A.m.b. Vachon, 1948a: 315.

RECORD:

- A.m.b.; Vachon, 1952a: 144-145, figs. 181, 183, 185, 187; Agadir;
 Anti-Atlas; Tanfigoult; Bou Izakarne, Tiznit region, MOROCCO.

Androctonus sergenti Vachon, 1948

A.s. Vachon, 1948b: 441.

RECORD:

- A.s.; Vachon, 1952a: 146-149, figs. 188-191, 199; Anti-Atlas;
 Ouarzazate; Tanalt, MOROCCO.

Genus Apistobuthus Finnegan, 1932Apistobuthus pterygocercus Finnegan, 1932

A.p. Finnegan, 1932: 92; Shannah, ARABIA. Andur, OMAN.

RECORDS:

A.p.; Vachon, 1966: 210; ARABIA.

A.p.; Vachon, 1979: 34-35, figs. 4, 5; Uraq (SE Arabia); Dhahiga; Shannah; Andhur; Al Khardj; Dhahran, SAUDI ARABIA.

A.p.; Vachon, 1980: 251-253, figs. 1-7, 24, pl. A; SSW of Mintrib, Wahiba Sands; Jiddat al Harasis, OMAN. SAUDI ARABIA. U.A. EMIRATES.

A.p.; Kinzelbach, 1985: SAUDI ARABIA.

A.p.; Al-Safadi, In Press; Ma'rib province; Shabwa province; Al-Gouf, SAUDI ARABIA. QATAR. EMIRATES. OMAN.

Genus Babycurus Karsch, 1886Babycurus crassimanus Caporiacco, 1936

B.c. Caporiacco, 1936a: 140-141, figs. 3a-b; Belet Amin, SOMALIA.

RECORD:

B.c.; Moriggi, 1941: 92; Belet Amin, SOMALIA.

Babycurus johnstonii Pocock, 1896Babycurus johnstonii ochraceus Masi, 1912

B.j.o. Masi, 1912: 105-106; Mogadiscio, SOMALIA.

RECORD:

B.j.o.; Moriggi, 1941: 92; Mogadiscio, SOMALIA.

Babycurus patrizii Borelli, 1925

B.p. Borelli, 1925a: 320-323; Giumbo (Foce del Giuba), SOMALIA.

RECORDS:

B.p.; Caporiacco, 1936a: 140; Belet Amin, SOMALIA.

B.p.; Moriggi, 1941: 92; Giumbo; Belet Amin, SOMALIA.

Babycurus somalicus Hirst, 1907

B.s. Hirst, 1907: 208-209; "Berbera and Durbar, Somaliland s. 1.400 ft"; Wagar Mts., SOMALILAND.

RECORD:

B.s.; Moriggi, 1941: 93; Berbera, Durbar, SOMALILAND.

Babycurus subpunctatus Borelli, 1925

B.s. Borelli, 1925a: 318-320; Cuban Cubu, SOMALILAND.

RECORD:

B.s.; Moriggi, 1941: 92; Cuban Cubu, SOMALILAND.

Babycurus taramassoi Borelli, 1919

B.t. Borelli, 1919: 369-371; Afgoi, SOMALIA.

RECORDS:

B.t.; Caporiacco, 1936a: 140; Belet Amin, SOMALIA.

B.t.; Moriggi, 1941: 92; Afgoi; Belet Amin; Ola Uager, SOMALIA.

Babycurus zambonellii Borelli, 1902

B.z. Borelli, 1902: 1-3; Chenafena, ERITREA.

RECORD:

B.z.; Moriggi, 1941: 92; Chenafena, ERITREA.

Genus Birulatus Vachon, 1974Birulatus haasi Vachon, 1974

B.h. Vachon, 1974: 949-950, figs. 231-234; south of Tafila, near Schauback, JORDAN.

RECORDS:

B.h.; Vachon & Kinzelbach, 1987: 100; JORDAN.

B.h.; Amr et al, 1988: 374; Tafila, JORDAN.

B.h.; El-Hennawy, 1988c: 19; South of Tafila, near Shobak, JORDAN.

Genus *Buthacus* Birula, 1908*Buthacus arenicola* (Simon, 1885)

Buthus a. Simon, 1885: 50-52; TUNISIA.

RECORDS:

Buthus leptochelys; Pocock, 1895: 299-300; S.W. Bank of Suez Canal, EGYPT.

B.a. & *B.a. fuscata*; Pallary, 1929: 140; Amguid; Tamanrasset; Ameri; Hoggar, ALGERIA.

B.a. & *B.a. fuscata*; Pallary, 1934: 98; Amguid; Tamanrasset; Ameri; Hassi-Tanesrouft, Hoggar, ALGERIA.

B.a.a.; Vachon, 1952a: 191-196, figs. 253, 256-258, 260, 266; Brak; Sebha; El Abiod; Zouila, (Fezzan) LIBYA. El Golea; Fort-Flattere; Fort-Polignac; Djanet (Pays Ajjer), ALGERIA.

B.a.; Levy, Amitai & Shulov, 1973: 125; North Sinai, Suez Canal, EGYPT West LIBYA. South TUNISIA.

B.a.; Levy & Amitai, 1980: 86-89, figs. 79-81, map 6; From Quseima in the east to Qantara in the west and south to about opposite to Suez; Bir Gifgafa, N. Sinai; West bank of Suez canal; Port Said; Ramleh, EGYPT. Tozzer; Gabes, S. TUNISIA. Bou-Saada; Biskra; Debila; Tassili n'Ajjer, S. ALGERIA. Central LIBYA.

B.a.; Kinzelbach, 1985: EGYPT.

B.a.; Vachon & Kinzelbach, 1987: 102; Sinai, EGYPT.

Buthacus arenicola spatzi Birula, 1911

B.s. Birula, 1911: 137-142, 3 figs.; S. TUNISIA.

RECORDS:

B.a.s.; Vachon, 1952a: 196-197, figs. 252, 254, 255, 259, 261, 266; Douz; Djerba, S. TUNISIA. El Oued; Region of Touggourt; Chotts algeriens ?, ALGERIA.

B.s.; Levy, Amitai & Shulov, 1973: 125; Central TUNISIA. North-east ALGERIA.

Buthacus claviceps (Pocock, 1900)

Buthus c. Pocock, 1900a: 54-55, pl. 4, fig. 3-3a; Berbera or Hargaisa, SOMALILAND.

RECORD:

B.c.; Levy, Amitai & Shulov, 1973: 125; SOMALIA.

Buthacus foleyi Vachon, 1948

B.f. Vachon, 1948b: 475.

RECORDS:

B.f.; Vachon, 1952a: 180-186, figs. 233-241; Ghat, LIBYA. Tamanrasset (Hoggar); Taraouhaout (Fort-Motylinski); Tin Zaouatene; In Amguel, ALGERIA.

B.f.; Levy, Amitai & Shulov, 1973: 125; South-west LIBYA. S. ALGERIA

Buthacus frontalis Werner, 1936

B.f. Werner, 1936: 176-177, fig. 1; 1 dry specimen, Asmara, ERITREA.

Buthacus leptochelys (Hemprich & Ehrenberg, 1829)

Androctonus (Leiurus) l. & A. (L.) *macrocentrus* Hemprich & Ehrenberg, 1829: 119, pl. 1, fig. 6; Sinai, EGYPT.

RECORDS:

Buthus l.; Karsch, 1881: 8; Sockna; Djibbene Oasis, SUDAN.

Buthus l.; Pocock, 1895: 299-300; Duroor, 60 mls N of Suakin, SUDAN.

B.l.; Simon, 1910: 75-76, fig. 11; near Pyramids (Giza); along the Nile until Luxor; Ramleh (Alexandria); Mariout; Rosetta; Port-Said; Suez, EGYPT.

- B.1.; Borelli, 1914: 158-159; Azizia; Valle Zigar (Gebel Soda), LIBYA.
 B.1.; Borelli, 1927: 352; Amseat (Porto Bardia); Giarabub; Azizia (Tripoli), LIBYA.
 Buthus 1.; Gough & Hirst, 1927: 3, fig.3; Khargeh Oasis; East of Cairo (Cairo-Suez road); Birket el Kerun (Fayum), EGYPT. Doroor, SUDAN.
 Buthus (B.)1.; Giltay, 1929: 196; Taimont, ALGERIA.
 B.1.; Caporiacco, 1932b: 396; Agedabia; Gialo; Augila; El Agheila; Es Sahabi; Hasseiat; Cufra; El Hauuari; Es Zurgh, LIBYA.
 B.1.; Pallary, 1934: 99; Oued Tadjmout (Mouydir occidental), Hoggar; l'Ait Ighazar, ALGERIA.
 B.1.; Werner, 1936: 176; Asmara, ERITREA.
 B.1.; Caporiacco, 1936b: 94,98; Cufra; Gialo, LIBYA.
 B.1.; Caporiacco, 1937a: 347; Gat; el Feuat; el Barcat; Uadi Iseien; Brach; Sebha; Bu-Ngen; Bir Guetin, LIBYA. Uadi Tabrakat (Tassili), ALGERIA.
 Buthus (B.) 1.; Whittick, 1947: 122; north Siwa, EGYPT. N.AFRICA. ARABIA.
 B.1.; Vachon, 1949a: 79-83, fig.266; S.MOROCCO, MAURITANIA, S.ALGERIA.
 B.1.; Vachon, 1952a: 199-203, figs.262-266; Beni Abbes; Adrar; In Salah; In Guezzam, S ALGERIA. Tiznit; valley of Draa, S MOROCCO. MAURITANIA ?.
 B.1.; Pringle, 1960: 76, fig.2; Tel Afar (west of Mosul), IRAQ.
 B.1.; Khalaf, 1962: 1-2; Tal-Afar; Makhmoor, IRAQ.
 B.1.; Vachon, 1966: 210; EGYPT. PALESTINE. SYRIA. IRAK.
 B.1.nitzani Levy, Amitai & Shulov, 1973: 126-128, figs.21-26; Holot Haluza, Central Negev; Gevulot; Ze'elim; south of Be'er Sheva'; near Revivim, PALESTINE.
 B.1.; Vachon, 1979: 38-39, figs.7,8,26,29,61-63; Wadi Diriyah; Hofuf Road; Wadi Khumra; Al Khubra; Jebel Shamar, SAUDI ARABIA.
 B.1.; Levy & Amitai, 1980: 77-83, figs.70-74, map 6; Jericho; wadis on the west shore of the dead Sea; Tiberias; south coastal plain; near Ashqelon; Mamshit, southeast of Be'er Sheva'; southern Negev, PALESTINE. Western shores of southern Sinai, EGYPT. S.LIBYA. S.ALGERIA. S.MOROCCO. Tel Afar, west of Mosul; Makhmoor, IRAQ. Palmyra, SYRIA. Wadi Deba' (100 km southeast of Amman), JORDAN.
 B.1.nitzani; Levy & Amitai, 1980: 83-86, figs.75-78, map 6; Haluza, southwest of Be'er Sheva'; Ze'elim; Revivim, northern Negev, PALESTINE.
 B.1.1.; Kinzelbach, 1984: 99; Wadi Ram (3 km north of Ram), JORDAN.
 B.1.; Kinzelbach, 1985: LIBYA. SUDAN. EGYPT. PALESTINE. JORDAN. IRAK. LEBANON. SYRIA. KUWAIT. QATAR. BAHRAIN. EMIRATES. SAUDI ARABIA.
 B.1.nitzani=B.1.; Vachon & Kinzelbach, 1987: 101; (Israel) PALESTINE.
 B.1.; El-Hennawy, 1988a: 17; Wadi Deba'; Wadi Rum, JORDAN.
 B.1.; Amr et al, 1988: 374; South-West of JORDAN.
 B.1.; El-Hennawy, 1991: 86-87; Wadi El-Raiyan, south-west of El-Fayum, EGYPT.

Buthacus leptochelys granosus (Borelli, 1929)

B.g. Borelli, 1929: 297-299, pl.vi; Port Sudan, SUDAN.

RECORDS:

- B.1.g.; Levy, Amitai & Shulov, 1973: 125; SUDAN.
 B.1.g.; Vachon, 1979: 38; coast of the Red Sea, SUDAN.

- Buthacus leptochelys occidentalis Vachon, 1953
 B.l.o. Vachon, 1953: 1017-1020, figs.3,4; Fort Gouraud; Atar;
 Chinguetti; Akjoujt; Aïoun Lebgar, MAURITANIA.
 RECORD:
 B.l.o.; Levy, Amitai & Shulov, 1973: 125; MAURITANIA.
Buthacus tadmorensis (Simon, 1892)
 Buthus t. Simon, 1892: 84.
 RECORDS:
 B.t.; Vachon, 1966: 210; PALESTINE.
 B.t.t.; Kinzelbach, 1985: SYRIA. IRAK.
Buthacus tadmorensis nigroaculeatus Levy, Amitai &
 Shulov, 1973
 B.yotvatensis n. Levy, Amitai & Shulov, 1973: 134-136, figs.38-41;
 BAHRAIN.
 RECORDS:
 B.yotvatensis n.; Vachon, 1979: 36-38, figs.6,8; Dammam; Al Khardj;
 Dhahran; Kurais area, SAUDI ARABIA.
 B.t.n.; Kinzelbach, 1985: QATAR. BAHRAIN. EMIRATES. SAUDI ARABIA.
 B.t.n.; Vachon & Kinzelbach, 1987: 101; BAHRAIN.
Buthacus tadmorensis yotvatensis Levy, Amitai &
 Shulov, 1973
 B.y. Levy, Amitai & Shulov, 1973: 130-134, figs.32-37; Yotvata, Mishor
 Timna', Arava Valley, (Israel) PALESTINE. Abu Hareira, SYRIA.
 ? Hinaidi, IRAQ.
 RECORDS:
 B.y.; Levy & Amitai, 1980: 90-93, figs.82-85, map 6; Yotvata; along
 'Arava Valley, S.PALESTINE. Abu Hareira, near Euphrates, SYRIA.
 Hinaidi?, IRAQ.
 B.y.; Kinzelbach, 1984: 99; Palmyra (Tadmur), SYRIA.
 B.t.y.; Kinzelbach, 1985: PALESTINE. JORDAN.
 B.t.y.; Vachon & Kinzelbach, 1987: 101; (Israel) PALESTINE. SYRIA.
 B.t.y.; Amr et al, 1988: 374; South of JORDAN.
 Genus Butheoloides Hirst, 1925
Butheoloides maroccanus Hirst, 1925
 B.m. Hirst, 1925: 414-416; Amizmiz, MOROCCO.
 RECORDS:
 Anaplobuthus parvus Caporiacco, 1932a: 233-234; Oed Tensift dicta,
 MAURITANIA ?. Marrakech, MOROCCO.
 B.m.; Vachon, 1952a: 104-109, figs.128-140,144,146,147; Amizmiz; Tizi
 N'Test (Moroccan Atlas), MOROCCO.
 Anoplobuthus parvus = ? B.m.; Vachon, 1952a: 114-115; Vallee de oued
 Tensift, Marrakech, MOROCCO.
 Genus Butheolus Simon, 1882
 Subgenus Butheolus Simon, 1882
Butheolus (Butheolus) gallagheri Vachon, 1980
 B.g. Vachon, 1980: 253-255, fig.24, pls.B,C; Wadi Rabkut (Raykhut),
 Jabal Samhan, Dhofar, OMAN.
 RECORD:
 B.g.; Vachon & Kinzelbach, 1987: 100; (Zufar) OMAN.
Butheolus (Butheolus) thalassinus Simon, 1882
 B.t. Simon, 1882: 248-249, pl.viii, fig.20; Aden, YEMEN.
 RECORDS:
 B.t.; Simon, 1890: 122; Maala; Aden, YEMEN.

- Buthus anthracinus* Pocock, 1895: 294-295, pl. IX, fig. 1-1a; Hadramaut, YEMEN.
- B.t.; Pocock, 1895: 316; Aden; Lahej; Shaikh Othman; Haithalhim, YEMEN.
- B.t.; Vachon, 1966: 210; ARABIA.
- B.t.; Vachon, 1980: 255; Aden, YEMEN.
- Subgenus *Nanobuthus* Pocock, 1895
- Butheolus* (*Nanobuthus*) *andersoni* (Pocock, 1895)
- N.a. Pocock, 1895: 314-315; Duroor, 60 mls N of Suakin, SUDAN.
- RECORDS:
- N.a.; Kraepelin, 1899: 38; Duroor, N of Suakin, SUDAN.
- N.a.; Moriggi, 1941: 91; Golfo di Tagiura; Obock, JIBUTI.
- Subgenus *Neobuthus* Hirst, 1911
- Butheolus* (*Neobuthus*) *berberensis* (Hirst, 1911)
- N.b. Hirst, 1911b: 462-464; Berbera, SOMALILAND.
- RECORDS:
- N.b.; Borelli, 1919: 365-366; Rahanuin, SOMALIA.
- N.b.; Borelli, 1930-1931: 219; Gaarre, ERITREA.
- N.b.; Moriggi, 1941: 90; Dancalia-Guarre, ERITREA. Rahanuin; Berbera, SOMALILAND.
- Genus *Buthiscus* Birula, 1905
- Buthiscus bicalcaratus* Birula, 1905
- B.b. Birula, 1905b: 622-624; S. TUNISIA.
- RECORDS:
- B.b.; Vachon, 1942: 419-421; Nefta, near chott Djerid, S. TUNISIA.
- Beni-Abbes; Biskra; Bou-Saada, ALGERIA.
- Buthacus ducrosi* Foley, 1945: 6-7; Hasi Fokra, 70 km near the east of Beni-Abbes, ALGERIA.
- B.b.; Vachon, 1952a: 89-95, figs. 100-117; Nefta; Douz, S. TUNISIA.
- Beni Abbes (S. Oranais); Hasi Fokra; El Oued; Biskra, ALGERIA.
- Genus *Buthotus* Vachon, 1949
- Buthotus conspersus* (Thorell, 1877)
- Buthus c.* Thorell, 1877: 115-118; "Caffraria", South Africa.
- RECORDS:
- Buthus c.*; Pavesi, 1895a: 38; Obbia, Eldherr; Sinadogo; Uebi, SOMALIA.
- Buthus c.*; Pavesi, 1897: 156; Ogaden, SOMALIA.
- Buthotus eminii* (Pocock, 1890)
- Buthus e.* Pocock, 1890b: 98-100, pl. 1, fig. 2; 1a "South shore of Victoria Nianza", Kenya.
- RECORDS:
- Buthus e.*; Borelli, 1919: 362-363; Dolo; Rive del Ganale Doria; Rahanuin; Uebi Mane; Afgoi; Brava; Lugh, SOMALIA.
- Buthus e.*; Borelli, 1925b: 9; Dolo; Gumbo (Basso Giuba); Afgoi, SOMALIA.
- Buthus e.*; Caporiacco, 1936a: 135-136; Belet Amin, SOMALIA.
- Buthus* (*hottentotta*) *e.*; Moriggi, 1941: 86; Afgoi; Lugh; Brava; Belet Amin; Gumbo; Dolo; Elba; Rahanuin, SOMALIA.
- Buthotus franzwernerii* (Birula, 1914)
- Buthus* (*hottentotta*) *f.* Birula, 1914: 646-653, fig. 1.
- RECORD:
- B.f.f.; Vachon, 1952a: 233-238, figs. 324, 330; Beni Ounif; Beni Abbes, (Sud Oranais) ALGERIA.

Buthotus franzwernerii gentili (Pallary, 1924)

Buthus (Hottentotta) g. Pallary, 1924: 219-220, fig.1.

RECORD:

B.f.g.; Vachon, 1952a: 238-241, figs.325-330; Ain Sefra, ALGERIA. near Beni Mellal; Dar Gaid Embarek, N.Middle Atlas; Goulmina; Tizi n'Test; Valley of Sous (80 km E.Taroudant); Agadir; Irherm; Ouarzazate; S.Djebel Bani; Foum Zayid; Tata; Zagora; Assa; Foum el Hassane; El Aioun du Draa; N.E.Djebel Aouksa; Djebel Tamsourt; Tazouguert (between Bou Denid and Gourrama); Rich; Ksar es Souk; Tizi n'Tichka; Agouim (N.Anti-Atlas); Mahjez; Tindouf, MOROCCO.

Buthotus fuscitruncus (Caporiacco, 1936)

Buthus f. Caporiacco, 1936a: 136-137, fig.1; Belet Amin, SOMALIA.

RECORDS:

Buthus (Hottentotta) f.; Moriggi, 1941: 87; Belet Amin, SOMALIA.

B.f.; Vachon & Stockmann, 1968: 110; Belet Amin, SOMALIA.

Buthotus hottentotta (Fabricius, 1793)

Scorpio h. Fabricius, 1793: 435; Sierra Leone.

RECORDS:

Buthus hottentotta; Kraepelin, 1891: 43-51, pl.1, fig.3; EGYPT. SOUTH ARABIA.

Buthus hottentotta; Pavesi, 1895b: 495-496; Auata (Boran Galla), SOMALIA.

Buthus hottentotta; Pavesi, 1897: 156; Elba; Magala re Umberto; Dolo, SOMALIA.

Buthotus jayakari (Pocock, 1895)

Buthus j. Pocock, 1895: 300-302, pl.IX, figs.2,2a; Muscat, OMAN.

RECORDS:

B.j.; Vachon, 1966: 210; ARABIA.

B.j.; Vachon, 1977: 210-211, figs.1,4, tables 1-3; Rostaq & An-Nid, Jebel Akhdar; Jebel Aswad, OMAN.

B.j.; Kinzelbach, 1985: EMIRATES. SAUDI ARABIA.

B.j.; Al-Safadi, In Press; East of Shebam; Wadi Dahr (25 km northwest of Sana'a); Beni Mater (50 km west of Sana'a), YEMEN.

Buthotus jayakari salei Vachon, 1980

B.j.s. Vachon, 1980: 255-257, fig.24, pl.D; near Taqah; Raysut; Wadi Rabkut, Jabal Samhan, [Dhofar] OMAN.

RECORD:

B.j.s.; Vachon & Kinzelbach, 1987: 100; (Zufar) OMAN.

Buthotus judaicus (Simon, 1872)

Buthus j. Simon, 1872: 252-254; Jerusalem, PALESTINE.

RECORDS:

Buthus j.; Simon, 1884: 191; Beirut, LEBANON.

Buthus j.; Werner, 1902: 597; PALESTINE.

B.j.; Vachon, 1966: 210; PALESTINE. LEBANON. SYRIA. JORDAN.

B.j.; Wahbeh, 1976: 89; Irbid; Sult, JORDAN.

B.j.; Levy & Amitai, 1980: 54-59, figs.52-56, map 4; From the north to Judean Mountains and along coastal plain from the north till Tel Aviv area, PALESTINE. Jarash, JORDAN. Beirut; Dahr el Ain; Amiyun; Sin-el-fil; Kariye, LEBANON.

B.j.; Kinzelbach, 1984: 100; Jerash, JORDAN.

B.j.; Kinzelbach, 1985: PALESTINE. JORDAN. LEBANON. SYRIA.

B.j.; El-Hennawy, 1988a: 17; Marka (N.-E.Amman); Irbid; Jerash; Salt; JORDAN.

B.j.; Amr et al, 1988: 373; Irbid; Salt, JORDAN.

Buthotus minax (C.L.Koch, 1875)

Buthus m. C.L.Koch, 1875: 4-7, pl.1, fig.2; Habab; Cairo??, EGYPT.
RECORDS:

Buthus hottentotta m.; Kraepelin, 1899: 22-23; Massawa, ERITREA.

Buthus (*Hottentotta*) *m.*; Birula, 1908: 141-145; Khartoum; between Khartoum and Duem; between Khor-Attar and Mongella; Mongella, SUDAN.

Buthus hottentotta var.m.; Tullgren, 1909: 2; Khartoum; Kaka at the White Nile, SUDAN.

Buthus m.; Simon, 1910: 72-73, figs.6,10; Upper EGYPT. Khartoum; Gondokoro, SUDAN.

Buthus m.; Borelli, 1915: 460; Adi Hugri; Nefassit; Sabarguma; Chenafena, ERITREA.

Buthus hottentotta m.; Gough & Hirst, 1927: 4, fig.7; Upper EGYPT. Bahr el Gebel; Mongalla; Kiro; Gondokoro; Kanisa; Malik Bor, SUDAN.

Buthus (*Hottentotta*) *m.*; Birula, 1928: 81-82; Sennar; Sungikai-Nubbaka, Kordofan Province; between Sungikai and Dilling; Dilling; Gulfangebidge; between Gebel-Gulfan and Debri; Gebel-Debri; between Kadugli and Keiga Tummero; Kadugli; Khor el Affin; Talodi; Hauptort; Nuba Mts Province; El Egheibisch; Tanguru; N. bank of White Nile, Tonga; Bir-Joghan, SUDAN.

Buthus m.; Borelli, 1929: 297; Medani, SUDAN.

Buthus m.; Borelli, 1930-31: 218; Afrera, ERITREA.

Buthus (*Hottentotta*) *m.*; Moriggi, 1941: 86; Afrera; Abab; Assab; Anseba; Sabarguma; Adi Caie; Mai Nefellis; Chenafena, ERITREA.

Buthus (*H.*) *hottentotta m.*; Roewer, 1943: 207; Sennaar, SUDAN.

B.m.; Vachon & Stockmann, 1968: 118-124, figs.39-40; Wad Medani; Kosti; Mongella; Khartoum; Jebelalein; Kadugli; Fahal-Gesira; Koalib; Mizeiquila, SUDAN.

Buthotus minax niloticus (Birula, 1928)

Buthus (*Hottentotta*) *m.n.* Birula, 1928: 83; Nile River; Kordofan and Sennaar regions, SUDAN.

RECORD:

B.m.n.; Vachon & Stockmann, 1968: 124; Lui; Turra, Darfur Province; Niama River, SUDAN.

Buthotus minax tigrinus (Caporiacco, 1937)

Buthus hottentotta t. Caporiacco, 1937b: 355-357; Aduam, rivum Gherungura, ERITREA.

RECORDS:

Buthus (*Hottentotta*) *t.*; Moriggi, 1941: 87; Adua; Gherungura, ERITREA.

B.m.t.; Vachon & Stockmann, 1968: 124-128, fig.62; Adua; Gherungura; Adi Ugri; Andreini; Adi Cajeh; Adi Caie; Enda Abba Malu, Adi Ugri; Sagneitti; Ghinda, Embatkalla River Valley, ERITREA.

Buthotus polystictus (Pocock, 1896)

Buthus p. Pocock, 1896b: 178-179, pl.II, fig.1; Goolis Mountains, SOMALILAND.

RECORDS:

Buthus p.; Kraepelin, 1899: 22; SOMALIA.

Buthus p.; Pocock, 1899a: 402; Turfa, Shebeli River, SOMALIA.

Buthus p.; Pocock, 1900b: 57; Goolis Mountains, SOMALILAND.

Buthus emini p.; Kraepelin, 1903: 560-562; Sso-omadu SOMALILAND. Azzab, ERITREA. Obock, FRENCH SOMALILAND (JIBUTI).

- Buthus p.; Borelli, 1904: 1; Massawa, ERITREA.
 Buthus p.; Borelli, 1919: 363; Dolo; Rahanuin; Merka; Mogadiscio, SOMALIA.
 Buthus p.; Borelli, 1925a: 316; Giumbo; Cuban Cubu, SOMALIA.
 Buthus p.; Borelli, 1930-31: 218; Dancalia, SOMALIA.
 Buthus p.; Moriggi, 1941: 87; Dancalia; Assab; Scioa, ERITREA.
 Giumbo; Cuban Cubu; Dolo; Rahanuin; Mogadiscio; Obbia; Eldherr; Siradogo e Uebi; Goolis region; Sso-omadu; Gibuti; Obock, SOMALIA & JIBUTI.
 B.p.; Vachon & Stockmann, 1968: 99-102, fig.16; Garoe; Bulo Burti; Giddaa; Uadi Amua; Guriassamo; Mogadiscio, SOMALIA. Djibouti; Obock; Plateau du Dai, FRENCH SOMALILAND.
 B.p.; Probst, 1973: 320, fig.10; SOMALIA.
Buthotus saulcyi (Simon, 1880)

Buthus s. Simon, 1880: 378.

RECORDS:

- B.s.; Pringle, 1960: 79-80, fig.5; Kirkuk; Suleimaniya; Halebcha; Mosul; Khanaqin area, IRAQ.
 B.s.; Khalaf, 1962: 2; Mosul; Kirkuk; Sulaimaniya; Halebcha; Khaniqin; Sheikhan (Galala Nahiya); near Salah El-Din, IRAQ.
 B.s.; Vachon, 1966: 210; IRAK.
 B.s.; Kinzelbach, 1985: SYRIA. IRAK.

Buthotus scaber (Hemprich & Ehrenberg, 1829)

Androctonus s. Hemprich & Ehrenberg, 1829:10, pl.2, fig.7; Arkiko, Abyssinia.

RECORDS:

- Buthus dimidiatus Simon, 1882: 244-245, pl.viii, fig.17; Tes, YEMEN.
 Buthus dimidiatus Simon, 1890: 122; Tes, YEMEN.
 Buthus s.; Pavesi, 1885: 197; Assab, ERITREA.
 Buthus s.; Pocock, 1891: 241-242; Perim Island, YEMEN.
 Buthus dimidiatus; Pocock, 1895: 293-294, 316; Hadramaut; Tes (Taez); Perim; Aden; Lahej; Shaikh Othman, YEMEN.
 Buthus s.; Kraepelin, 1899: 19; Insel Perim, YEMEN.
 Buthus s.; Moriggi, 1941: 84; Assab; Archico, ERITREA.
 B.s.; Pringle, 1960: 82; Dyana Rawandowz; Dohuk-Aqra, IRAQ.
 B.s.; Vachon, 1966: 210; ARABIA. IRAK.
 B.s.; Vachon & Stockmann, 1968: 91; EGYPT. S.W.ARABIA.

Buthotus schach (Birula, 1905)

Buthus s. Birula, 1905a: 134.

RECORDS:

- B.s.; Vachon, 1966: 211; IRAK.
Buthotus syrticus (Borelli, 1914)
 Buthus s.; Borelli, 1914: 156-158; Homs, LIBYA.

Buthotus trilineatus (Peters, 1862)

Centrurus t. Peters, 1861b: 515; Tette, Mozambique.

RECORDS:

- Buthus t.; Borelli, 1901: 1; Adi-Hugri; Nefassite; Ela Berett, ERITREA
 Buthus t.; Borelli, 1904: 1; Ghinda; Asmara; Ghedem; Teclesan, ERITREA
 Buthus (Hottentota) t.; Moriggi, 1941: 85-86; Ghinda; Asmara; Monti Gheden; Techleson; Udi Ugri; Nefasit, ERITREA. Giumbo; Mogadiscio; Obock; Gibuti, SOMALILAND (SOMALIA & JIBUTI).

- B.t.; Vachon & Stockmann, 1968: 103-106, figs.20,24; Amba Mussolini; Gelib; Afgoi; El Bano; Gondaraba; Dande; Gongabaina; El Meti; El Dire; Chenafena; Avi, SOMALILAND and ETHIOPIA.
(4611 MNHP) 10 of uncertain locality in EGYPT.
- B.t.; Probst, 1973: 320; SOMALIA.
Buthotus trilineatus fuscatus (Masi, 1912)
- Buthus t.f. Masi, 1912: 95-101; Benadir, Mogadiscio, SOMALIA.
RECORD:
- Buthus (Ottentotta) minax f.; Moriggi, 1941: 87; Mogadiscio, SOMALIA.
Genus Buthus Leach, 1815
Buthus atlantis Pocock, 1889
- B.a. Pocock, 1889: 340-341, pl.15, fig.4.
RECORD:
- B.a.a.; Vachon, 1952a: 248-254, figs.345,347,349,351,354,355,357-362; Mogador; Ghir; Ouassem (between Mogador and Cap Sim); Cap Sim; Agadir, MOROCCO.
Buthus atlantis parroti Vachon, 1949
- B.a.p. Vachon, 1949b: 168.
RECORD:
- B.a.p.; Vachon, 1952a: 254-255, figs.346,350,352,353,356,363; valley of Sous; forest Ademine (40 km SW Agadir); near Taroudant, MOROCCO.
Buthus barbouri Werner, 1932
- B.b. Werner, 1932: 300, fig.141.
RECORD:
- B.b.; Vachon, 1952a: 261-262, fig.371; Agadir, MOROCCO.
Buthus insolitus Borelli, 1925
- B.i. Borelli, 1925b: 9-12; Giumbo (Basso Giuba), SOMALIA.
RECORD:
- B.i.; Moriggi, 1941: 85; Giumbo, SOMALIA.
Buthus maroccanus Birula, 1903
- B.m. Birula, 1903: 106.
RECORDS:
- Prionurus (?) tingitanus Pallary, 1928: 450-451, fig.4; Rabat; tour Hassan et a Chella, MOROCCO.
- B.m.; Vachon, 1952a: 255-261, figs.364-371; Rabat (Oudayas, Chellah, Tour Hassan); route de Seoul (near Rabat); route de Meknes; carrieres de l'Oued Akrarch; rives du Bou Regreg; piste cotiere vers Temara (a 4 km de Rabat); Boulhaut, MOROCCO.
Buthus occitanus (Amoureux, 1789)
- Scorpio o. Amoureux, 1789: 9, pl.1, figs.1-3; Montpellier, France.
RECORDS:
- Androctonus o.; Lucas, 1849: 272; Constantine; Bone, E & W ALGERIA.
- B.o.; Karsch, 1881: 8; Audjila to Bengasi, LIBYA.
- B.europaeus; Pocock, 1895: 299; Mersa Matroo; Ramleh, EGYPT. Duroor, SUDAN.
- B.o.; Werner, 1902: 598; Bona, east ALGERIA. Alexandria, EGYPT.
- B.o.; Tullgren, 1909: 2-3; Cairo, EGYPT.
- Buthus europaeus; Simon, 1910: 68-70, figs.5,8; Lower EGYPT.
- B.o.; Gough & Hirst, 1927: 5, fig.9; Meadi (Cairo); Kafr Amar; Ramleh; Mersa Matrouh; Wadi Sikait, EGYPT.
- B.o.; Pallary, 1929: 140; Ameri, Hoggar, ALGERIA.
- B.o.; Pallary, 1934: 98,99; Ameri, Hoggar, ALGERIA. Boutilimit, pays Trarza, MAURITANIA. Djibouti; Obock, JIBOUTI.

- B.o.; Pallary, 1938: 281-282; Obock, FRENCH SOMALIA (JIBUTI).
- B.o.; Moriggi, 1941: 84; SOMALIA.
- B.o.o.; Vachon, 1952a: 262-271, figs.331-344,372-379,400; Cote occidentale du Maroc (de Port-Lyautey a Mazagan); Port Lyautey; Sidi bou Knadel (between rabat and Port-Lyautey); Mamora forest (near Rabat); Sidi Moussa; Rabat (Oudayas); Temara forest (near Rabat); near Oued Ykem (25 km from Rabat); Plage de Miramar; Casablanca; Driet er Roumi (50 km south of Rabat); Azemmour (near Mazagan), MOROCCO.
- B.o.; Vachon, 1953: 1021-1024, fig.12; Boutilimit; Nouakchott, MAURITANIA.
- B.o.; Kinzelbach, 1982: 53; south of Taza, MOROCCO.
- B.o.; Kinzelbach, 1984: 100; Wadi Ram; Desert highway 65 km north of Aqaba, JORDAN.
- B.o.; Kinzelbach, 1985: LIBYA. SUDAN. EGYPT. PALESTINE. LEBANON.
- B.o.; El-Hennawy, 1988a: 17; Wadi Rum; desert highway, north-east of Aqaba; near Aqaba, JORDAN.
- B.o.; Amr et al, 1988: 374; Wadi Rum, JORDAN.
- Buthus occitanus barcaeus Birula, 1909
- B.o.b. Birula, 1909: Cyrenaica, LIBYA.
- RECORDS:
- B.o.b.; Borelli, 1914: 155-156; Gharian, LIBYA.
- B.o.b.; Borelli, 1927: 351; between Porto Bardia and Giarabub, LIBYA.
- B.o.b.; Caporiacco, 1937a: 345; Soluch (Cirenaica); Gharian, LIBYA.
- Buthus occitanus berberensis Pocock, 1900
- B.o.b. Pocock, 1900b: 56; SOMALILAND.
- RECORDS:
- B.o.b.; Birula, 1903: 106-107; Tolo; Dagago; Artu; Charar; Enea; Bajade; Tschertscher, SOMALIA.
- B.o.b.; Borelli, 1904: 2-3; Ghedem; Habibaret, ERITREA.
- B.o.b.; Moriggi, 1941: 84; Assab; El Alberet; Monti Chedan; Massawa; Artur; Bellana; Tolo; Cercer, Abyssinia & ERITREA.
- Belet Amin; Debab, SOMALIA.
- Buthus occitanus israelis (Shulov & Amitai, 1959)
- B.o.mardochei i. Shulov & Amitai, 1959: 218-225; Mash'abbe Sade, PALESTINE.
- RECORDS:
- B.o.mardochei i.; Vachon, 1966: 211; PALESTINE.
- B.o.i.; Levy & Amitai, 1980: 16-21, figs.25-29, map 1; Southern foothills of Judea till 30 km north of Tel Aviv, PALESTINE. Sinai, EGYPT.
- B.o.i.; Vachon & Kinzelbach, 1987: 101; (Israel) PALESTINE.
- Buthus occitanus malhommei Vachon, 1949
- B.o.m. Vachon, 1949c: 376.
- RECORD:
- B.o.m.; Vachon, 1952a: 304-308, figs.400,433-444; Mechra ben Abbou; valley Oum er Rbia, MOROCCO.
- Buthus occitanus mardochei Simon, 1878
- Buthus m. Simon, 1878: 158-160.
- RECORDS:
- B.o.m.; Vachon, 1952a: 286-291, figs.400-408; Souss; Agadir; vallee de l'oued Lem dad (between Agadir and Mogador); near Mogador; Arganiers forest; throughout l'oued Ksob, S MOROCCO.
- B.o.m.alluaudi; Vachon, 1952a: 291-295, figs.409-416; Tiznit, S MOROCCO.

B.o.m.mimeuri; Vachon, 1952a: 295-301, figs.417-425; Goulimine; plaine au nord bassin de l'Oum el Achar; oued au nord de Goulimine; between Noftia and Labiar; cours inferieur du Dra; Guelta Kahla, MOROCCO.

B.o.m.panousei; Vachon, 1952a: 301-304, figs.426-432; near Tafnidit; Dra valley; Foum Dra, MOROCCO.

Buthus occitanus paris (C.L.Koch, 1839)

Androctonus p. C.L.Koch, 1839a: 25-28, pl.151, fig.352.

RECORD:

B.o.p.; Vachon, 1952a: 308-316, figs.356,400,445-455; Ain Draham (Kroumirie); Gadeau de Kerville, TUNISIA. Akfadon forest (Kabylie); near Bone; Tizi n'Kouilal (Djurdjura); Constantine; near Bougie; near Alger; Aumale; Ain Almou (Oudjda), ALGERIA. Tanger; Taza; Azrou; Ain Leuh; Oulmes; Khenifra; El Harcha; Kasba Tadla; Ait Attab; Demnat, MOROCCO.

Buthus occitanus tunetanus (Herbst, 1800)

Scorpio t. Herbst, 1800: 68-69, pl.3, fig.3.

RECORDS:

B.o.t.; Borelli, 1914: 154-155; Misurata; Azizia; Gharian, LIBYA.

B.o.t.; Borelli, 1927: 351; Porto Bardia, LIBYA.

B.o.t.; Giltay, 1929: 196-197; Hoggar, ALGERIA.

B.o.t.; Caporiacco, 1932b: 395-396; El Agheila; Agedabia, LIBYA.

B.o.t.; Pallary, 1934: 99; Hoggar, ALGERIA.

B.o.t.; Caporiacco, 1937a: 345; Mellaha (Tripoli); Bir-Ues-ca (Gebel es Soda); Gat, LIBYA.

B.o.t.; Vachon, 1952a: 272-281, figs.381-393; Ghat, LIBYA. Near Tunis; Sousse; Ksar el Ahmra; ile Kerkenna; near Gafsa; Sfax; ile Djamour; Djebel Oum Ali; Haidra; Thala; Sbeitla; between Sfax and Gabes; Maknassy; El Djem; ile Djerba; Tatahouine; Medenine; Mareth; Matmata, TUNISIA. Monts des Ouled Nail & Hauts-Plateaux Moudjebana (near Djelfa); Bab el Messaoud (near Djelfa); Dar Chiouk; Zahkhar; Feg Riguig (near Hassi Bahbah); Messaad; Chellala; Djebel Amour; Geryville; Monts des Ksour; El Abiodh Sidi Cheikh; Bouktoub; Ain Sefra (near Tiout); redoute de Mecheria; Mecheria; Ideles (Hoggar); Tassili des Ajjers; Beni Abbas, ALGERIA. Tarda (between Ksar es Souk and Goulmina), S.MOROCCO.

B.o.t.lepineyi; Vachon, 1952a: 281-286, figs.393-400; near Amred; Targa Inoulay; Ait Souka; Tamzikth; near Azid Taouacount (Toubkal); Sidi Chamarouch; gorges de l'AsifTifni; confluent de l'Asif Iminene Ait Mizane; Adret (north of Tizi n'Tacheddrit); Ait Mizane; Djebel Tacheddrit; Cirque d'Argound (Skoutana); bord de l'Iminene; Tizi n'Test; Tizi n'Talghemit; Azgour; flanks north-west Tizerag; Plateau de l'Oukaimaden; Versant nord du Djebel Tignoustih; massif du M'Goum (south of Demnat); Ifrane; Daid Ifrane; Aguelmane; Sidi Ali, MOROCCO.

B.o.t.; Vachon, 1966: 211; EGYPT.

Buthus occitanus zeylensis Pocock, 1900

B.o.z. Pocock, 1900b: 56-57; Zeyla, SOMALILAND.

RECORDS:

B.o.z.; Kraepelin, 1903: 558-559; Dabab, SOMALILAND.

B.o.z.; Borelli, 1919: 363; Merka, SOMALIA.

B.o.zeilensis; Borelli, 1930-31: 218; Aurra; Rorom; Gaarre; Altipiano Tetejah, SOMALIA.

B.o.z.; Caporiacco, 1936a: 137; Belet Amin, SOMALIA.

B.o.z.; Moriggi, 1941: 84; Dabab; Zeyla, SOMALILAND.

Genus *Cicileus* Vachon, 1948

Cicileus exilis (Pallary, 1928)

Buthacus e. Pallary, 1928: 349-350, figs. 3, 3a, 3b, Djanet (Tassili), ALGERIA.

RECORDS:

Buthacus e.; Pallary, 1929: 135, 140; Asekhrem, ALGERIA.

Buthacus e.; Pallary, 1934: 92, 93, 98, figs. 1, 2; Djanet; Asekhrem, ALGERIA.

C.e.; Vachon, 1952a: 81-85, figs. 88-99; Djanet (Tassili); In Ezzane; Chirfa; Asekrem (Hoggar), S. ALGERIA.

Genus *Compsobuthus* Vachon, 1949

Compsobuthus acutecarinatus (Simon, 1882)

Buthus a. Simon, 1882: 245-246, pl. viii, fig. 18; Tes, YEMEN.

RECORDS:

Buthus a.; Simon, 1890: 122; Aden; Tes, YEMEN. Obok, JIBUTI.

Buthus a.; Thorell, 1893: 364-365; Assab, ERITREA.

Buthus a.; Pocock, 1895: 292-293, 300, 316; Hadramaut valley; Aden; Perim Island; Tes (Taez); Lahej; Haithalhim, YEMEN. Zaila, SOMALILAND. Duroor, SUDAN.

Buthus a.; Pocock, 1900b: 57; Zeyla, SOMALILAND.

Buthus a.; Borelli, 1904: 2; Otumbo, ERITREA.

Buthus (Buthus) a.; Birula, 1908: 129-132; Assiub near Kairo, S. EGYPT. Khartoum, SUDAN.

Buthus a.; Tullgren, 1909: 2; Wadi Halfa, SUDAN.

Buthus a.; Simon, 1910: 73-74; Assiout till Wadi-Halfa, Upper EGYPT. Khartoum, SUDAN.

Buthus a.; Gough & Hirst, 1927: 4, fig. 6; Bulak Dakroul (Giza); Kafr Amar; Helouan; Sollum-Siwa District; Luxor; Wadi Sikait, EGYPT. Khartoum; Sennar Province, SUDAN.

Buthus (Buthus) a.; Birula, 1928: 80; Sennaar; Khartoum; El Obeid; Sungikan-Nubbaka, S. Kordofan; Tanguru, SUDAN.

Buthus a.; Borelli, 1929: 297; Khartoum, SUDAN.

Buthus a.a.; Caporiacco, 1937b: 357-358; Bender Cassim; El Donfar; Gardo, SOMALIA.

Buthus a.; Moriggi, 1941: 85; Zeila; Obok; Bender Cassim; El Donfar; Gardo, SOMALILAND (SOMALIA & JIBUTI).

Buthus (Hottentotta) a.; Whittick, 1941: 43-44; Dhala; Jebel Jihaf; Jebel Harir, W. ADEN. Ghaiman (south-east of San'a), YEMEN.

Buthus (Buthus) a.; Whittick, 1947: 123; Khamissa, Siwa, EGYPT. N AFRICA. SYRIA. ARABIA. SUDAN. ERITREA.

C.a.; Khalaf, 1962: 2; Baghdad; Salah El-Din; Baquba region, IRAQ.

C.a.; Vachon, 1966: 211; ARABIA; IRAK.

C.a.; Kinzelbach, 1984: 100; Palmyra (Tadmur), SYRIA.

Compsobuthus acutecarinatus abyssinicus (Birula, 1903)

Buthus a.a. Birula, 1903: 108; Kachenu'ka, Abyssinia.

RECORD:

Buthus a.a.; Werner, 1916: 79-80; DJIBUTI.

Compsobuthus acutecarinatus arabicus Levy, Amitai & Shulov, 1973

C.ar. Levy, Amitai & Shulov, 1973: 122-124, figs. 17-20; Daugha; Wadi Mughhin; Ramlat Enfel; Khor Enfel, SOUTH ARABIA.

RECORDS:

C.a.; Vachon, 1979: 39-40, figs. 9, 11; Daugha; Ramlat Enfel; Khor

Enfel; Wadi Mughohin; SW & NW Dhahran; Quwayiyah; El Khubra,
Ath Thamamah, N of Riyadh, SAUDI ARABIA.

C.a.a.; Kinzelbach, 1985: QATAR. EMIRATES. SAUDI ARABIA.

C.a.a.; Vachon & Kinzelbach, 1987: 100,101; Arabian Desert.

Compsobuthus acutecarinatus brevimanus (Werner, 1936)

Buthus (Hottentotta) a.b. Werner, 1936: 175; Yemen; Huka-Hazz, ARABIA.
RECORDS:

Buthus (Hottentotta) a.b.; Whittick, 1941: 44; Jebel Harir, W.ADEN.

Wadi Dhahr (north-west of San'a); Bait Baus (south of San'a);

Jebel Kohl (north of San'a), YEMEN.

C.b.; Vachon, 1966: 211; IRAK.

Compsobuthus acutecarinatus jordanensis Levy, Amitai
& Shulov, 1973

C.j. Levy, Amitai & Shulov, 1973: 120-122, figs. 11-16; Wadi Deb'em,
south-east Amman; Hissa on the way to Ma'an; Tel Qarma, JORDAN.
Oasis near Damascus; Doummar, SYRIA.

RECORDS:

C.a.j.; Kinzelbach, 1985: JORDAN. SYRIA.

C.a.j.; Vachon & Kinzelbach, 1987: 100,101; JORDAN.

C.a.j.; El-Hennawy, 1988a: 17; East of Aqaba; East of the Dead Sea
(west of Qatrana at Wadi El-Mujib), JORDAN.

C.j.; Amr et al, 1988: 372; Wadi Deb'em; Hissa; Tel Qarma, JORDAN.

Compsobuthus acutecarinatus maindroni (Kraepelin, 1901)

Buthus m. Kraepelin, 1901a: 11; Muscat, OMAN.

RECORDS:

Buthus m.; Borelli, 1904: 2; Ghedem; Halibaret; Massawa, ERITREA.

Buthus a.m.; Borelli, 1930-1931: 218; Gaarre, ERITREA.

Buthus a.m.; Moriggi, 1941: 85; Dancalia-Guarre; El Alberet;
Massawa; Monti Cheden, ERITREA.

C.m.; Vachon, 1966: 211; ARABIA.

C.m.; Levy, Amitai & Shulov, 1973: 114; Muscat, OMAN. Aden, YEMEN.
SOMALIA. SUDAN.

Compsobuthus acutecarinatus matthiesseni (Birula,
1905)

Buthus acutecarinatus m. Birula, 1905a: 142.

RECORDS:

C.m.; Pringle, 1960: 77, fig. 3; Baghdad; Khanaqin area; Kirkuk, IRAQ.

C.m.; Vachon, 1966: 211; IRAK.

C.k. ? Levy, Amitai & Shulov, 1973: 114; IRAQ.

C.a.m.; Kinzelbach, 1985: IRAK.

C.m.=C.a.m.; Vachon & Kinzelbach, 1987: 101.

Compsobuthus berlandi Vachon, 1950

C.b. Vachon, 1950b: 456-561, figs. 1-5; Fort-Gouraud (400 km east of
Villa-Cisneros); Kedia d'Idjil (mountain east of Fort-Gouraud),
MAURITANIA.

RECORDS:

C.b.; Vachon, 1953: 1020, fig. 10; Fort Gouraud; Kedia d'Ijil; Atar;
Hamdoun, S. of Atar, MAURITANIA.

C.b.; Levy, Amitai & Shulov, 1973: 114; MAURITANIA.

Compsobuthus manzonii (Borelli, 1915)

Buthus acutecarinatus m. Borelli, 1915: 458

RECORDS:

C.m.; Vachon, 1966: 211; ARABIA.

C.m. Levy, Amitai & Shulov, 1973: 114; YEMEN.

Compsobuthus werner (Birula, 1908)Buthus acutecarinatus w. Birula, 1908: 129-132; EGYPT.

RECORDS:

- C.w.; Vachon, 1949a: 97-100, figs. 285, 287, 289, 290, 292; Wadi Halfa, SUDAN.
- C.w.; Vachon, 1952a: 217-220, figs. 278-285, 287-292; Wadi Halfa, SUDAN.
- C.w.; Vachon, 1979: 40-42, figs. 10, 11, 58-60; Wadi Marba, Khamis Mushayt; Village Qaraah; Abha-Taif Road; Wadi Usfahn (near Jeddah), SAUDI ARABIA.
- C.w.w.; Levy & Amitai, 1980: 63-67, figs. 57-61, map 5; South extending north along the Judean desert to Jericho, PALESTINE. Southern and central Sinai, EGYPT.
- C.w.; Kinzelbach, 1984: 100; Zarqa Ma'in; Wadi al-Hasa (Kings Highway) Petra, JORDAN.
- C.w.w.; Kinzelbach, 1985: LIBYA. SUDAN. EGYPT. PALESTINE. JORDAN. LEBANON. SYRIA. IRAK. SAUDI ARABIA.
- C.w.; El-Hennawy, 1988a: 17-18; Abdoun (S.-W. Amman); Tabarbour (N.-E. Amman); Petra; Wadi El-Hasa (King's Highway); Zarqa Ma'in; Wadi Shueib; Shaumari Wildlife Reserve near Azraq, JORDAN.
- C.w.; El-Hennawy, 1988b: 21; Geziret El-Haggar, near El-Shohada, EGYPT.
- C.w.; Moustafa, 1988: 57-60, 77, figs. 14, 31; St. Catherine; Wadi Feiran, S. Sinai, EGYPT.

Compsobuthus werner carmelitis Levy, Amitai &

Shulov, 1973

- C.c. Levy, Amitai & Shulov, 1973: 115-117, figs. 1-6; Nahal Me'arot, Mt. Carmel; 4 km west of Majd el Kurum, Western Galilee, PALESTINE.

RECORDS:

- C.c.; Levy & Amitai, 1980: 70-73, figs. 65-67, map 5; Nahal Me'arot, Mt. Carmel, Western Upper Galilee; Arbel, Eastern Lower Galilee, PALESTINE.
- C.w.c.; Kinzelbach, 1985: PALESTINE.
- C.w.c.; Vachon & Kinzelbach, 1987: 100, 101; (Israel) PALESTINE.

Compsobuthus werner judaicus (Birula, 1905)Buthus acutecarinatus j. Birula, 1905a: 140; Jerusalem, PALESTINE.

RECORDS:

- C.j.; Vachon, 1966: 211; PALESTINE. LEBANON. IRAK.
- C.w.j.; Levy & Amitai, 1980: 67-70, figs. 62-64, map 5; Northern to southern foothills of Judea and coastal plain until Gaza, PALESTINE. Ba'albek, LEBANON.

Compsobuthus werner klaptoczi (Birula, 1909)

RECORDS:

Buthus acutecarinatus k.; Borelli, 1927: 351; Amseat (Porto Bardia), LIBYA.

- C.k. Levy, Amitai & Shulov, 1973: 114; LYBIA.

C.w.k.; Kinzelbach, 1985: LIBYA.

- C.k.=C.w.k.; Vachon & Kinzelbach, 1987: 101.

Compsobuthus werner longipalpis Levy, Amitai &

Shulov, 1973

- C.l. Levy, Amitai & Shulov, 1973: 117-120, figs. 7-10; Nahal Arugot, 'En Gedi; northern coast of the Dead Sea, between Kaliya and 'En Fashkha, PALESTINE. Wadi Kid, south-east Sinai, EGYPT.

RECORDS:

- C.l.; Levy & Amitai, 1980: 73-75, figs. 68-69, map 5; Nahal 'Arugot, near 'En Gedi; near the Dead Sea, PALESTINE. S.-E. Sinai, EGYPT.

C.w.l.; Kinzelbach, 1985: PALESTINE. JORDAN.

C.w.l.; Vachon & Kinzelbach, 1987: 100,101; Shores of the Dead Sea (Israel) PALESTINE.

C.w.l.; Amr et al, 1988: 373; North-West of JORDAN.

Genus Isometrus Hemprich & Ehrenberg, 1829

Isometrus maculatus (de Geer, 1778)

Scorpio m. de Geer, 1778: 346 [?= S. europaeus Linnaeus, 1758: 625].

RECORDS:

I.m.; Simon, 1910: 83; Port Said; Alexandria, EGYPT.?

I.m.; Borelli, 1919: 371; Mogadiscio; Merka, SOMALIA.

I.m.; Caporiacco, 1936a: 141; Belet Amin, SOMALIA.

I.m.; Caporiacco, 1937b: 359-360; Mansur, SOMALIA.

I.m.; Moriggi, 1941: 93; Massaua, ERITREA. Belet Amin; Mansur; Merca; Mogadiscio, SOMALIA.

Genus Leiurus Hemprich & Ehrenberg, 1829

Leiurus quinquestriatus (Hemprich & Ehrenberg, 1829)

Androctonus (Leiurus) q. Hemprich & Ehrenberg, 1829: 353, pl.1, fig.5; EGYPT.

RECORDS:

Scorpio occitanus; Audouin, 1825: p.173, pl.8, fig.1; ? EGYPT & SYRIA.

Scorpio occitanus; Audouin, 1827: pp.410-411, pl.8, fig.1; ? EGYPT & SYRIA.

Buthus q.; Koch, 1875: 7; Cairo, EGYPT.

Buthus beccarii Simon, 1882: 246-248, pl.viii, fig.19; Moka, YEMEN.

Buthus beccarii; Simon, 1890: 122,123; Moka; Perim, YEMEN.

Buthus q.; Pocock, 1891: 242-243; Perim Island, YEMEN. EGYPT.

Jerusalem, PALESTINE. ALGERIA.

Buthus q.; Pocock, 1895: 292,299; Hadramaut, YEMEN. Suez; Amarna; Ras Gharib; Fayum; Assouan; Abbasiyeh (Cairo), EGYPT.

Buthus q.; Werner, 1902: 598; Luxor, EGYPT.

Buthus (B.) q.q.; Birula, 1908: 129; Khartoum; Gebel Araschkol, SW of Khartoum, SUDAN.

Buthus q.; Tullgren, 1909: 3; Cairo, EGYPT.

Buthus q.; Simon, 1910: 70-71, fig.9; Sinai; Cairo till Sudan, EGYPT.

Buthus q.; Borelli, 1927: 351-352; between Porto Bardia and Giarabub; Giarabub (Cirenaica), LIBYA.

Buthus q.; Gough & Hirst, 1927: 5, fig.8; Mersa Matrouh ?; Gebel Dhalfa (Sinai); Ein Musa; Mokattam; Meadi; Giza Zoological Gardens; Maghara; Tamia; Gharak; Kharga Oasis; Dakhla Oasis; Qena; Girga; Luxor; Abbassiyah (Cairo); Abusir Pyramid; Birket el Kerun; Kara (near Beliana); Gharamul (Eastern Desert); Hurghada; Amarna, EGYPT. Khartoum; Merowe; Dongola; Blue Nile between Wad Medani and mouth of Dinder; Wadi Halfa; Port Sudan, SUDAN. Medina, SAUDI ARABIA.

Buthus (B.) q.; Birula, 1928: 79-80; Mokattamwuste, S EGYPT.

Buthus q.; Borelli, 1929: 297; Nekheila, W Desert, EGYPT.

Buthus q.; Caporiacco, 1932b: 396; Agedabia; Oasi di Cufra; Cufra, el Giof, LIBYA.

Buthus q.; Caporiacco, 1936b: 98; et Tag'; Rebiana; Cirenaica; el-Auenat, LIBYA.

Buthus q.q.; Caporiacco, 1937a: 346; Gat; Uadi Iseien (Fezzan); Ubari e Auenat; Tegerhi; Uan el Chebir; Cufra, LIBYA.

Buthus (Buthus) q.; Whittick, 1941: 43; Chaiman (south-east of San'a), YEMEN.

- Buthus q.; Moriggi, 1941: 84; Gallabat, SUDAN.
 Buthus (Buthus) q.; Whittick, 1947: 122-123; Gagub, Siwa; Sinai, EGYPT. N AFRICA. SYRIA. PALESTINE. ARABIA.
 L.q.; Vachon, 1949a: 88-93, figs.267-277; Bilma, SUDAN.
 L.q.; Vachon, 1952a: 208-213, figs.267-277; Brak; Greifa; Sebha; Bendbeia; reg near Tin Abunda; Zouila-Misguin road, (Fezzan) LIBYA. In Guezzam; Tin Zaouatene, (S.Hoggar) S.ALGERIA.
 L.q.; Vachon, 1966: 211; EGYPT. LEBANON. SYRIA. JORDAN.
 L.q.; Wahbeh, 1976: 89; Azraq; Theban; Jarash; Karak; Ma'an; Madaba; Mafraq; Qatrana; Sult; Shoubaq; Tafila; Umm-Kuttane; Wadi-Musa, JORDAN.
 L.q.; Vachon, 1979: 49-50, figs.8,37,46-50,64-66; Wadi Mizbil; Wadi Durmah; Khamis Mushayt; Wadi Tumeir; Wadi Mutaiwiyah, Mecca Road; Jeddah; Wadi Khumra; Abha-Gizan, km 53; Wadi ad Dilla; Kushm Dibi; Jebel Banban; Jubail; Shi area, al Qunfida; Wadi Fatima; Gizan, SAUDI ARABIA.
 L.q.; Kinzelbach, 1984: 100; Wadi Musa; Wadi al-Mujib (Kings Highway); Aqaba (10 km south of it); wadi east of the Marine biological station); Wadi Ram (3 km north of Ram); 3 km east of Mount Nebo; Wadi al-Hasa (Kings Highway); Petra, JORDAN.
 Palmyra (Tadmur), SYRIA.
 L.q.; Kinzelbach, 1985: LIBYA. SUDAN. EGYPT. PALESTINE. JORDAN. LEBANON. SYRIA. QATAR. EMIRATES. SAUDI ARABIA.
 L.q.; El-Hennawy, 1988a: 18; Aqaba; Azraq; Dhiban; Irbid; Jerash; Karak; Madaba; Ma'an; Mafraq; east of Mount Nebo; Petra; Qatrana; Salt; Shobak; Tafila; Umm Kuttane; Wadi Deba'; Wadi El-Hasa & Wadi El-Mujib (King's Highway); Wadi Musa; Wadi Rum; Wadi Shueib, JORDAN.
 L.q.; Moustafa, 1988: 53-56,77, figs.13,30; St.Catherine; Wadi Feiran, S.Sinai, EGYPT.
 L.q.; Amr et al, 1988: 373; Mafrak; Petra; Wadi Deba; Wadi Al-Walah (Madabah), JORDAN.

Leiurus quinquestriatus brachycentrus (Hemprich & Ehrenberg, 1829)

Androctonus (Leiurus) q.b. Hemprich & Ehrenberg, 1829: 5.

RECORDS:

- L.q.b.; Vachon, 1966: 211; ARABIA.
 L.q.; Levy & Amitai, 1980: 47; Jidda (Gumfudam), SAUDI ARABIA.
Leiurus quinquestriatus hebraeus (Birula, 1908)
 Buthus q.h. Birula, 1908: 124-129; Wadi 'Arrud, 'Arabia Petraea', PALESTINE.

RECORDS:

- L.q.h.; Vachon, 1966: 212; PALESTINE.
 L.q.h.; Levy & Amitai, 1980: 48-53, figs.47-51, map 3; (except the mediterranean coast) throughout PALESTINE. Senappir island; Sinai (except northern coast), EGYPT. East of Palmyra; Wadi Barada near Suk; Doummar; Soueida-Gebel Druz; 60 km east of Homs; Road Homs-Damascus; Gebel Mazar, SYRIA. El Kah, N.LEBANON. Mafraq; Petra; Wadi Deba' (100 km southeast of Amman). JORDAN. Jidda; Medina; Amarna, SAUDI ARABIA. Hadhramaut; Perim, YEMEN.
Leiurus quinquestriatus voelschowi (Werner, 1902)

Buthus v. Werner, 1902: 597-598; PALESTINE.

RECORDS:

- Buthus v.; Vachon, 1966: 211; PALESTINE.

- L.q.v.; Pohl, 1967: 209-215, figs.1-4; Jerusalem; Arad; Mount Gilboa, PALESTINE. Assuan; Luxor, EGYPT.
- L.q.v.; Vachon & Kinzelbach, 1987: 101; (Israel) PALESTINE.
 Genus Lissothus Vachon, 1948
 Lissothus bernardi Vachon, 1948
- L.b. Vachon, 1948: 186.
- RECORD:
- L.b.; Vachon, 1952a: 97-101, figs.118-127; El Abiod (Fezzan), LIBYA.
 Lissothus occidentalis Vachon, 1950
- L.o. Vachon, 1950a: 186; & 1952b: 172-173, fig.1; MAURITANIA.
- RECORDS:
- L.o.; Vachon, 1952a: 368; (Unpublished new species) MAURITANIA.
- L.o.; Vachon, 1953: 1021, fig.11; Akjoujt; Atar, MAURITANIA.
 Genus Lychas C.L.Koch, 1845
 Lychas asper (Pocock, 1891)
 Lychas asper obscurus (Kraepelin, 1913)
- Archisometrus a.o. Kraepelin, 1913: 175-176.
- RECORDS:
- L.a.o.; Borelli, 1925b: 16; Giumbo (Basso Giuba), SOMALIA.
- Archisometrus a.o.; Caporiacco, 1941: 35; El Banno; Caschai; Murle, SOMALIA.
- Archisometrus a.o.; Moriggi, 1941: 91; Giumbo; Galla e Sidama; El Banno; Caschei; Murle, SOMALIA.
 Lychas obsti Kraepelin, 1913
- L.o. Kraepelin, 1913: 175, fig.8a; Kilimatinde, DUTCH EAST AFRICA.
 Rahanwin, SOMALIA (Berl.Mus.).
- RECORDS:
- L.o.; Borelli, 1919: 366; Uebi Mane, SOMALIA.
- Archisometrus o.; Moriggi, 1941: 91; Rahanwin, SOMALIA.
- L.o.; Probst, 1973: 322-323; SOMALIA.
 Genus Mesobuthus Vachon, 1950
 Mesobuthus sp.
- RECORD:
- M.; Kinzelbach, 1984: 100-101; Tillil (15 km north-west of Homs); Krak des Chevaliers, SYRIA.
 Mesobuthus caucasicus (Nordmann, 1840)
- Androctonus c. Nordmann, 1840: 731.
- RECORDS:
- Buthus c.; Penther, 1912: 111; Kal`at Shergat; Mosul; Cheibani, IRAK.
- L.q.h.; Vachon, 1966: 212; IRAK.
- M.c.; Kinzelbach, 1985: IRAK.
 Mesobuthus eupeus (C.L.Koch, 1839)
- Androctonus e. C.L.Koch, 1839a: 127.
- RECORD:
- M.e.; Kinzelbach, 1985: SYRIA. IRAK.
 Mesobuthus eupeus mesopotamicus (Penther, 1912)
- Buthus eupaeus m. Penther, 1912: 111-112; Mosul; Kal`at Shergat; Assur, IRAK.
- RECORDS:
- M.e.; Pringle, 1960: 82-83, fig.7; Baghdad; Baquba; Nasriya; Hilla, IRAQ.
- M.e.; Khalaf, 1962: 2; Mosul; Shergat; Baghdad; Nasiriya; Baquba; Hilla; Khaniqin; Salah El-Din, IRAQ.
- M.e.m.; Vachon, 1966: 212; IRAK.

Mesobuthus gibbosus (Brulle, 1832)

Buthus g. Brulle, 1832: 57.

RECORDS:

M.g.; Vachon, 1966: 213; LEBANON. SYRIA.

M.g.; Kinzelbach, 1985: LEBANON. SYRIA.

Mesobuthus pietschmanni (Penther, 1912)

Buthus p. Penther, 1912: 112-114; Assur; Kal'at Shergat, IRAK.

RECORD:

Buthus p.; Vachon, 1966: 211; IRAK.

Genus Microbuthus Kraepelin, 1898Microbuthus fagei Vachon, 1949

M.f. Vachon, 1949c: 393-396, figs. 457-475; Nouakchott, MAURITANIA.

RECORDS:

M.f.; Vachon, 1951: 256-257; West of riviere de l'Etoile, north of Port-Etienne; near Nouakchott, MAURITANIA.

M.f.; Vachon, 1952a: 321-324, figs. 457-460, 462-464, 468, 470, 472-476; Nouakchott, MAURITANIA.

M.f.; Vachon, 1953: 1024, fig. 13; Nouakchott; bay of Star, N. of Port-Etienne, MAURITANIA.

Microbuthus litoralis (Pavesi, 1885)

Butheolus l. Pavesi, 1885: 197-198; Assab, ERITREA.

RECORDS:

M.l.; Moriggi, 1941: 91; Assab, ERITREA.

M.l.; Vachon, 1952a: 317, figs. 466, 467, 476; Assab, ERITREA. Djibouti, JIBUTI.

Microbuthus pusillus Kraepelin, 1898

M.p. Kraepelin, 1898: 4; Tadjura Bay, Gulf of Aden, JIBUTI.

RECORDS:

M.p.; Kraepelin, 1899: 38; Tadjura Bay, Gulf of Aden, JIBUTI.

M.p.; Kraepelin, 1901a: 267; Djibouti; Obock, JIBUTI.

M.p.; Moriggi, 1941: 90; Golfo di Tagiura; Gibuti; Obock, SOMALIA.

M.p.; Vachon, 1952a: 317, figs. 469, 471, 476; Tadscharabay, Gulf of Aden, JIBUTI.

M.p.; Vachon, 1966: 213; ARABIA.

Genus Odontobuthus Vachon, 1950Odontobuthus doriae (Thorell, 1877)

Buthus d. Thorell, 1877: 33.

RECORD:

O.d.; Pringle, 1960: 83, fig. 8; Khanaqin, IRAQ.

Genus Odonturus Karsch, 1879Odonturus dentatus Karsch, 1879

O.d. Karsch, 1879: 119; Mombasa, KENYA.

RECORDS:

O.d.; Caporiacco, 1937b: 359; Villaggio Duca degli Abruzzi; Mogadiscio, SOMALIA.

O.d.; Moriggi, 1941: 90; Afgoi; Dolo; Mogadiscio; Villaggio Duca degli Abruzzi, SOMALIA.

Genus Orthochirus Karsch, 1891Orthochirus aristidis (Simon, 1882)

Butheolus a. Simon, 1882: 258-259, pl. viii, fig. 23; Nubia, EGYPT.

RECORDS:

Eutheolus a.; Kraepelin, 1903: 563; Lasman, SOMALIA.

Butheolus a.; Birula, 1908: 145; Mokattamgebirge bei Kairo, EGYPT.

O.a.; Simon, 1910: 78, fig.12; Assouan; Luxor, EGYPT. Wadi-Halfa, SUDAN.

Butheolus a.; Werner, 1916: 81; Djibouti, JIBUTI.

Butheolus melanurus; Gough & Hirst, 1927: 3, fig.2; Asswan; Luxor; Sollum-Siwa District, EGYPT. Wadi Halfa; Nubia, SUDAN.

O.a.; Birula, 1928: 83; Mokattam desert near Kairo, EGYPT.

Butheolus a.; Moriggi, 1941: 90; Lasman, SOMALIA.

O.a.; Vachon & Kinzelbach, 1987: 102; EGYPT.

Orthochirus bicolor (Pocock, 1897)

Orthochirus bicolor insularis (Pocock, 1899)

Butheolus i. Pocock, 1899.

RECORD:

O.b.i.; Levy & Amitai, 1980: 94; Socotra, YEMEN.

Orthochirus glabrifrons (Kraepelin, 1903)

Butheolus g. Kraepelin, 1903.

RECORD:

O.g.; Levy & Amitai, 1980: 94; Muscat, OMAN.

Orthochirus innesi Simon, 1910

O.i. Simon, 1910: 79, fig.13; Djebel Mokattam, near Cairo, EGYPT. & SYRIA.

RECORDS:

O.i.; Boehm, 1912: 27; Wady Dougla (near Tourah), near Cairo, EGYPT.

O.i.; Borelli, 1927: 353; Amseat (Porto Bardia); Giarabub, LIBYA.

Butheolus innesi; Gough & Hirst, 1927: 3, fig.1; Meadi (Cairo), EGYPT.

O.scrobiculosus; Whittick, 1947: 124; Siwa, EGYPT.

O.i.; Vachon, 1952a: 225-229, figs.293,296,298,302,304-312; Djebel Mokattam, Lower EGYPT. Brak, Fezzan, LIBYA. Ghadames, S.TUNISIA. Ouargla; Beni Abbes; In Salah, S.ALGERIA..

O.i.; Vachon, 1966: 213; EGYPT. LEBANON. SYRIA.

O.i.; Wahbeh, 1976: 89; Madaba; Qatrana, JORDAN.

O.i.; Vachon, 1979: 53-55, figs.36,38,55-57; Wadi Mizbil; Wadi Mutaiwiyah, Mecca Road; Al Khardj; Afif, N of Abha; Jeddah; Kushm Dibi, SAUDI ARABIA.

O.i.; Kinzelbach, 1985: LIBYA. SUDAN. EGYPT. PALESTINE. JORDAN. LEBANON. SYRIA. IRAK. KUWAIT. QATAR. SAUDI ARABIA.

O.i.; El-Hennawy, 1988a: 18; near Amman; Madaba; Qasr Amra; Qatrana, JORDAN.

O.i.; Amr et al, 1988: 374; Madabah, JORDAN.

Orthochirus persa (Birula, 1900)

Butheolus melanurus p. Birula, 1900: 359.

RECORD:

O.p.; Vachon, 1966: 213; ARABIA. IRAK.

Orthochirus scrobiculosus (Grube, 1873)

Androctonus s. Grube, 1873: 56-57; Lenkora, Transcaucasia.

RECORDS:

Butheolus s.persa; Penther, 1912: 114; Kal'at Shergat; Assur; Rakka; Babylon, IRAK.

O.s.; Pringle, 1960: 78-79, fig.4; Baghdad City; Khanaqin; Nasriya, IRAQ.

O.s.; Khalaf, 1962: 2; Shergat; Babylon; Rakka; Baghdad; Nasiriya, Khaniqin; Baquba region; Salah El-Din, IRAQ.

O.s.; Kinzelbach, 1985: IRAK.

O.s.; Moustafa, 1988: 69-73,77, figs.17,34; St.Catherine; Wadi Feiran, S.Sinai, EGYPT.

- Orthochirus scrobiculosus mesopotamicus Birula, 1918
 O.s.m. Birula, 1918: 35; IRAK.
 RECORD:
 O.s.m.; Vachon, 1966: 214; IRAK.
Orthochirus scrobiculosus negebensis (Shulov & Amitai, 1960)
 O.innesi n. Shulov & Amitai, 1960: 117-119; Wadi Nafha, Central Negev, PALESTINE..
 RECORDS:
 O.i.n.; Vachon, 1966: 213; PALESTINE.
 O.s.n.; Levy & Amitai, 1980: 96-101, figs.86-90, map 7; From south extending north along the Judean Desert to Jericho, PALESTINE. Sinai, EGYPT. Qasr Amra; near Amman, JORDAN.
Orthochirus seurati Pallary, 1929
 O.s. Pallary, 1929: 139-140, figs.1,3; Tamanrasset; Ideles, Hoggar, ALGERIA.
 RECORD:
 O.s.; Pallary, 1934: 98; Tamanrasset; Ideles, Hoggar, ALGERIA.
Genus Parabuthus Pocock, 1890
Parabuthus granimanus Pocock, 1895
 P.g. Pocock, 1895: 311-312, pl.IX, figs.4-4d; Zeyla, SOMALIA. Aden, YEMEN. Massowah, ERITREA.
 RECORDS:
 P.g.; Pocock, 1896b: 178; Goolis Mountains, SOMALILAND.
 P.g.; Pocock, 1900b: 56; Zeyla, SOMALILAND.
 P.g.; Birula, 1915b: 134-136; Zeyla; Goolis Mountains, SOMALILAND. Aden, YEMEN.
 P.g.; Borelli, 1930-1931: 219; Beilul, SOMALIA.
 P.g.; Moriggi, 1941: 89; Bailul; Massaua; Paese Bouma, ERITREA. Dabat; Goolis region; Zeyla; Gibuti, SOMALIA & JIBUTI.
Parabuthus heterurus Pocock, 1899
 P.h. Pocock, 1899b: 402; Hargesa; Silul; Shebeli, SOMALILAND.
 RECORDS:
 P.h.; Pocock, 1900b: 56; Hargaisa; Silul; Shebeli River; Goolis Mountains, SOMALILAND.
 P.h.; Borelli, 1919: 365; Mogadiscio; Gelib e Margherita; riva sinistra del Giuba, SOMALIA.
 P.h.; Borelli, 1925a: 316-317; Belet Mamu; Giumbo (Foce del Giuba), SOMALIA.
 P.h.; Borelli, 1925b: 13; Bohotle a Berbera; Giumbo (Basso Giuba); Mogadiscio, SOMALIA.
 P.h.; Caporiacco, 1927b: 115; SOMALIA.
 P.h.; Caporiacco, 1936a: 137; Belet Amin, SOMALIA.
 P.h.h.; Caporiacco, 1937: 358-359; El Donfar; Gardo; Bender Cassim, SOMALIA.
 P.h.; Caporiacco, 1939: 305; Neghelli, SOMALIA.
 P.h.; Moriggi, 1941: 88; Galla e Sidama; Neghelli, SOMALIA.
Parabuthus heterurus stefaninii Caporiacco, 1927
 P.s. Caporiacco, 1927a: 58-60; Darod, SOMALIA.
 RECORDS:
 P.h.s.; Caporiacco, 1937b: 359; Gardo, SOMALIA.
 P.h.s.; Moriggi, 1941: 89; Darod; Gardo, SOMALIA.

Parabuthus hunteri Pocock, 1895

P.h. Pocock, 1895: 309-310; Duroor, 60 mls N of Suakin; Suakin, SUDAN.
RECORDS:

P.liosoma h.; Hirst, 1911a: 218-219; Omdurman, SUDAN.

P.h.; Birula, 1915b: 134; Duroor; Suakin; Red Sea coast; Omdurman near Khartoum, SUDAN.

P.liosoma h.; Gough & Hirst, 1927: 3; Kafr Amar EGYPT.

Parabuthus liosoma (Hemprich & Ehrenberg, 1829)

Androctonus (Prionurus) leisoma Hemprich & Ehrenberg, 1829: 8, pl.II, fig.6; Loehaje (Loheia), YEMEN.

RECORDS:

Buthus l.; Simon, 1882: 244; Aden; Tes, YEMEN. Gurfuda, SAUDI ARABIA.

Buthus l.; Simon, 1890: 122; Aden; Tes, YEMEN.

Heterobuthus l.; Kraepelin, 1891: 68-69, pl.2, figs.19,36; Massaua, ERITREA.

P.l.; Thorell, 1893: 366-367; Massawa; Assab, ERITREA.

P.l.; Pavesi, 1895a: 38-39; Obbia; Afene, SOMALI.

P.l.; Pocock, 1895: 295,316, figs.5-5d; Shebu; Aden; Haithalhim; Lahej; Shaikh Othman, YEMEN.

P.l.; Pavesi, 1897: 156; Dolo, SOMALIA.

P.l.; Birula, 1903: 112; Gensa; Goffale, Danakil merid.; Dagogo; Herer, Danakil, SOMALIA. Bajade W of Djibuti, JIBUTI

P.l.; Masi, 1912: 101-104; Benadir; Mogadiscio, SOMALIA.

P.l.; Birula, 1915a: 13-14; Yemen; Hadramaut; Aden, S.-E. ARABIA.

P.l.; Birula, 1915b: 133-134; Loehaje (Loheia); Haithalhim, Shaikh Othman; Tes; Aden; Hadramaut, YEMEN.

P.l.; Birula, 1928: 83-84; Kassala Province, SUDAN.

P.l.l.; Moriggi, 1941: 87; Afene; Obbia; Mogadiscio, SOMALIA.

P.l.; Vachon, 1966: 214; ARABIA.

P.l.; Probst, 1973: 321; ARABIA. EGYPT. RED SEA.

P.l.l.; Vachon, 1979: 55-56, figs.3,36,39; Bahara; Jeddah; Abha-Gizan, km 53; Wadi ad Dilla; Shi area, al Qunfida; Burainam, near Jeddah; near Gizan, SAUDI ARABIA.

Parabuthus liosoma abyssinicus (Pocock, 1901)

P.a. Pocock, 1901: 1; Shoa, ABYSSINIA.

RECORDS:

P.a.; Borelli, 1901: 1; Keren, ERITREA.

P.a.; Borelli, 1904: 3; Ghedem, ERITREA.

P.a.; Birula, 1915b: 137; Keren, ERITREA.

P.a.; Borelli, 1915: 461; Sceik-tabuc, Massaua, ERITREA.

P.l.a.; Borelli, 1919: 364-365; Dolo; Uebi Mane; Rahanuin; Lugh; Mogadiscio, SOMALIA.

P.l.a.; Borelli, 1925a: 317-318; Duca degli Abruzzi, SOMALIA.

P.l.a.; Borelli, 1925b: 12; Dolo; Afgoi; Bardera; Balad, SOMALIA.

P.l.abyssinica; Caporiacco, 1927a: 58; Mogadiscio; Darod; Uegit; Bar Medaghe, SOMALIA.

P.l.a.; Borelli, 1930-31: 218; Rorom, SOMALIA.

P.l.a.; Caporiacco, 1937b: 358; Magadi; Tiegiglo; Carim; Gardo; Rocca Littorio; Bender Cassim; El Donfar (Migiurtinia), SOMALIA.

P.l.a.; Moriggi, 1941: 87-88; Amhara, ERITREA. Scioa; Harar; Galla e Sidama, SOMALIA.

Parabuthus liosoma dmitrievi Birula, 1903

P.l.d. Birula, 1903: 113; Kachenuha, ABYSSINIA.

RECORDS:

P.l.d.; Borelli, 1925b: 13; Bardera, SOMALIA.

P.l.dimitrievi; Borelli, 1930-1931: 219; Beilul, SOMALIA.

P.l.d.; Caporiacco, 1941: 34; El Banno, Dancalia, SOMALIA.

P.l.dimitrievi; Moriggi, 1941: 88; El Banno, Galla e Sidama; Beilul; Dancalia; Berbera, SOMALIA.

Parabuthus mixtus Borelli, 1925

P.m. Borelli, 1925b: 13-16; Balad, SOMALIA.

RECORDS:

P.m.; Caporiacco, 1941: 34; El Banno; El Dire; Sagan; Gondaraba; Asile; Gongabaino; Caschei; Elolo, SOMALIA.

P.m.; Moriggi, 1941: 89; Balad; El Banno; El Dire; Gondoraba; Asile; Gongabaino; Caschei; Elolo, SOMALIA.

Parabuthus mixtus obscurior Caporiacco, 1941

P.m.o. Caporiacco, 1941: 34; El Banno; El Dire, SOMALIA.

RECORD:

P.m.o.; Moriggi, 1941: 90; El Banno; El Dire; Galla e Sidama, SOMALIA.

Parabuthus pallidus Pocock, 1895

P.p. Pocock, 1895: 312-314; Mombasa, Kenya.

RECORDS:

P.p.; Borelli, 1919: 365; Rahanuin; Beled; Bardera, SOMALIA.

P.p.; Caporiacco, 1927a: 58; Uegit; Benadir, SOMALIA.

P.p.; Caporiacco, 1937: 358; Mansur, SOMALIA.

P.p.; Moriggi, 1941: 89; Pianura dell'Omo; Bourille; Paese Bouma, Galla e Sidama; Dabab; Goolis region; Zeila; Gibuti, SOMALIA & JIBUTI.

Parabuthus zavattarii Caporiacco, 1939

P.z. Caporiacco, 1939: 305-306; Mega, SOMALIA.

RECORD:

P.z.; Moriggi, 1941: 89; Mega, Galla e Sidama, SOMALIA.

Genus Uroplectes Peters, 1862Uroplectes carinatus (Pocock, 1890)

Lepreus c. Pocock, 1890a: 129, pl. XIV, fig. 3-3a; "South Africa near tropic of Capricorn", South Africa.

RECORDS:

Lepreus c.; Pavesi, 1897: 157; Dolo; Bela, SOMALIA.

U.c.; Moriggi, 1941: 92; Dolo; Bela, SOMALIA.

Uroplectes fischeri (Karsch, 1879)

Lepreus f. Karsch, 1879: 124-125; Barawa, SOMALIA.

RECORDS:

U.f.; Pocock, 1899b: 400-401; Barawa, SOMALIA.

U.f.; Pocock, 1900a: 54; N.-W. SOMALIA.

U.f.; Kraepelin, 1913: 178-179; Barawa, SOMALILAND.

U.f.; Borelli, 1919: 366-367; Dolo; Rive del Ganale Doria; Mogadiscio; Caitoi; Ballad e Merca; Gelib e Margherita; Riva sinistra del Giuba, SOMALIA.

U.f.; Moriggi, 1941: 91; Ghegut; Segirso; Orohaut; Brava; Dolo; Balad; Caitoi; Gelib e Margherita; Mogadiscio; Merca; Deban; Sull'Ueb; Medo-Erella; Berbera; Hargeisa; Turfa-Lummo, SOMALIA and ERITREA.

U.f.; Probst, 1973: 323; SOMALIA.

- Uroplectes fischeri intermedius Caporiacco, 1941
 U.f.i. Caporiacco, 1941: 35; El Dire, SOMALIA.
 RECORD:
 U.f.i.; Moriggi, 1941: 91; El Dire, Gallo e Sidama, SOMALIA.
Uroplectes patrizii Caporiacco, 1936
 U.p. Caporiacco, 1936a: 137-140, fig.2; Belet Amin, SOMALIA.
 RECORD:
 U.p.; Moriggi, 1941: 92; Belet Amin, SOMALIA.
Uroplectes vittatus (Thorell, 1877)
 Lepreus v. Thorell, 1877: 121-122; "Caffraria", South Africa.
 RECORDS:
 Lepreus v.; Pavesi, 1897: 156; Ogaden; Debain; Medo-Erelle; Brava, SOMALIA.
 U.v.; Borelli, 1919: 367-369; Rahanuin, SOMALIA.
 U.v.; Moriggi, 1941: 92; Rahanuin; Ogaden, SOMALIA.
Genus Vachoniolus Levy, Amitai & Shulov, 1973
Vachoniolus globimanus Levy, Amitai & Shulov, 1973
 V.g. Levy, Amitai & Shulov, 1973: 137-139, figs.42-48; OMAN.
 RECORDS:
 V.g.; Vachon, 1979: 42-44, figs.18-25,28,31,34-36; Bada Haza; Bada Zaid, Abu Dhabi, EMIRATES.
 V.g.; Vachon & Kinzelbach, 1987: 100; OMAN.
Vachoniolus minipectenibus (Levy, Amitai & Shulov, 1973)
 Buthacus m. Levy, Amitai & Shulov, 1973: 128-130, figs.27-31;
 Munegger-Sanam; Gebel Shamar; Naifa, SAUDI ARABIA.
 RECORDS:
 V.minipectinibus; Vachon, 1979: 49, figs.12-17,27,30,33,36; Munneger Sanam; Gebel Shamar; S of Dharan; Khobar; Naifa, SAUDI ARABIA.
 V.m.; Kinzelbach, 1985: SAUDI ARABIA.
 V.m.; Vachon & Kinzelbach, 1987: 100,101; Arabian Desert.

Superfamily Scorpionoidea

Family Diplocentridae Pocock, 1893

- Genus Heteronebo Pocock, 1899
Heteronebo forbesi Pocock, 1899
 H.f. Pocock, 1899: 7-9?; 'Abd al-Kuri (near Socotra), YEMEN.
 RECORDS:
 H.f.; Levy & Amitai, 1980: 115.
 H.; Vachon & Kinzelbach, 1987: 95.
Heteronebo granti Pocock, 1899
 H.g. Pocock, 1899: 7-9?; 'Abd al-Kuri (near Socotra), YEMEN.
 RECORDS:
 H.g.; Levy & Amitai, 1980: 115.
 H.; Vachon & Kinzelbach, 1987: 95.
Genus Nebo Simon, 1878
Nebo flavipes Simon, 1882
 N.f. Simon, 1882: 249-250; Tes, YEMEN.
 RECORDS:
 N.f.; Simon, 1890: 122; Tes, YEMEN. Marsaba, SYRIA ?.

- N.f.; Pocock, 1895: 295-296, 316; Isthmus, Aden; Shaikh Othman; Haithalhim; Hadramaut, YEMEN. Muscat, OMAN.
- N.f.; Kraepelin, 1899: 98; SYRIA. YEMEN.
- N.f.; Vachon & Kinzelbach, 1987: 101.
Nebo franckei Vachon, 1980
- N.f. Vachon, 1980: 257-260, figs. 14-19, 21, 23, 24, pl. F; Khadrafi, Jabal Qamr, Dhofar, OMAN.
- RECORD:
- N.f.; Vachon & Kinzelbach, 1987: 100; Zufar, OMAN.
Nebo grandis Francke, 1980
- N.g. Francke, 1980.
- RECORD:
- N.g.; Vachon & Kinzelbach, 1987: 100; S.YEMEN.
Nebo hierichonticus (Simon, 1872)
- Hemiscorpion hierichonticus Simon, 1872: 255; Jordan valley, PALESTINE
- RECORDS:
- N.h.; Simon, 1890: 122; Aden, YEMEN. Jordan valley, PALESTINE.
 Djebel-Ataka, near Suez, EGYPT.
- N.h.; Kraepelin, 1899: 98; SYRIA. PALESTINE. Aden, YEMEN.
- N.h.; Simon, 1910: 81, fig. 16; Djebel Ataka, near Suez; Djebel Mokattam, EGYPT.
- N.hierichonticus; Gough & Hirst, 1927: 5; Mokattam; Suez, EGYPT. SYRIA
- N.h.; Vachon, 1966: 214; EGYPT. ARABIA. PALESTINE. SYRIA. JORDAN.
- N.h.; Wahbeh, 1976: 89; Karak; Madaba, JORDAN.
- N.h. ?; Vachon, 1977: 211-212, figs. 2, 4; Rostaq, N Jebel Akhdar; Qhawr; Birkat Sharaf al Nadi Sahtan; Al Khadra & Tabagah, Wadi Sahtan; An Nid, Jebel Akhdar, OMAN.
- N.h.; Levy & Amitai, 1980: 116-122, figs. 99-103, map 9; Throughout PALESTINE. Gebel Ataka near Suez; Gebel Mokattam near Cairo; Sinai, EGYPT. Amman; Petra, JORDAN. Dibba?; Muscat; Qara Mt., OMAN. Hadramaut; Aden, YEMEN.
- N.h.; Kinzelbach, 1984: 101; Zarqa Ma'in; Wadi al-Hasa (Kings Highway) Petra, JORDAN.
- N.h.; Kinzelbach, 1985: EGYPT. PALESTINE. JORDAN. LEBANON. SYRIA. SAUDI ARABIA.
- N.h.; El-Hennawy, 1988a: 19; Amman; Karak; Madaba; Petra; Wadi El-Hasa (King's Highway); Zarqa Ma'in, JORDAN.
- N.h.; Moustafa, 1988: 45-48, 77, figs. 11, 28; St. Catherine; Wadi Feiran, S. Sinai, EGYPT.
- N.h.; Amr et al, 1988: 374; Madabah; Karak; Aman; Petra, JORDAN.
Nebo omanensis Francke, 1980
- N.o. Francke, 1980.
- RECORDS:
- N.o.; Vachon, 1980: 263; Jabal Akhdar; Jabal Aswad, OMAN.
- N.o.; Vachon & Kinzelbach, 1987: 100; OMAN.
Nebo whitei Vachon, 1980
- N.w. Vachon, 1980: 257-260, figs. 8-13, 20, 22, 24, pl. E; Wadi Nahiz; Wadi Darbat & Jabal Aram, Jabal Qara, [Dhofar] OMAN.
- RECORD:
- N.w.; Vachon & Kinzelbach, 1987: 100; Zufar, OMAN.
Nebo yemenensis Francke, 1980
- N.y. Francke, 1980.
- RECORD:
- N.y.; Vachon & Kinzelbach, 1987: 100; N.YEMEN.

Family **Ischnuridae** Simon, 1879Genus **Opisthacanthus** Peters, 1862Opisthacanthus asper (Peters, 1862)Ischnurus a. Peters, 1862b: 513-514; Inhambane, Mozambique.
RECORDS:

O.a.; Pavesi, 1897: 157-158; Herghesa, SOMALIA.

O.a.; Moriggi, 1941: 96; Hargeisa, SOMALIA.

Opisthacanthus fischeri Kraepelin, 1910

O.f. Kraepelin, 1910: 79; "Gebiet des Kilimandjaro-Ngurumi, Maragoja-Tembe", Tanganyika.

RECORDS:

O.f.; Borelli, 1930-1931: 219; Gaarre, SOMALIA.

O.f.; Moriggi, 1941: 97; Dancalia-Guarre, SOMALIA.

Family **Scorpionidae** Peters, 1862Genus **Hemiscorpius** Peters, 1862Hemiscorpius arabicus Pocock, 1899

H.a. Pocock, 1899a: 413-415; Aden, YEMEN.

RECORDS:

H.lepturus; Pocock, 1895: 316; Aden, YEMEN.

H.a.; Vachon, 1966: 214; ARABIA.

H.a.; Vachon, 1979: 59, figs.41,44,45; Al Hair; Kushm Dibi, (South of Riyadh) SAUDI ARABIA.

H.lepturus a.; Kinzelbach, 1985: EMIRATES. SAUDI ARABIA.

Hemiscorpius lepturus Peters, 1862

H.l. Peters, 1862a: 426.

RECORDS:

H.l.; Pringle, 1960: 84-85, fig.9; Mandeli; Khanaqin; Koritu, IRAQ.

H.l.; Khalaf, 1962: 2; Mandali; Khaniqin; Koritu, IRAQ.

H.l.; Vachon, 1966: 214; IRAK.

Hemiscorpius maindroni Kraepelin, 1900

H.m. Kraepelin, 1900: 16.

RECORDS:

H.m.; Vachon, 1966: 215; ARABIA.

H.m.; Vachon, 1977: 212-213, figs.3,4; An Nid, Jebel Akhdar, OMAN.

Hemiscorpius socotranus Pocock, 1899

H.a. Pocock, 1899c: 8; SOKOTRA.

RECORDS:

H.s.; Caporiacco, 1937b: 362; Bender Cassim, SOMALIA.

H.s.; Moriggi, 1941: 93; Bender Cassim, SOMALIA.

Hemiscorpius tellini Borelli, 1904

H.t. Borelli, 1904: 3-5; Halibaret, ERITREA.

RECORD:

H.t.; Moriggi, 1941: 93; El Alberet, ERITREA.

Genus **Pandinus** Thorell, 1876Pandinus boschisi Caporiacco, 1937

P.b. Caporiacco, 1937b: 361-362; El Caiat (Harrara), SOMALIA.

RECORD:

P.b.; Moriggi, 1941: 95; El Caiat, Harar, SOMALIA.

Subgenus Pandinoides Vachon, 1974Pandinus (Pandinoides) cavimanus (Pocock, 1888)

Scorpio c. Pocock, 1888: 247-249; Umyamuezi; Kilimandjaro, East Africa
RECORDS:

P.c.; Borelli, 1919: 372; Arigalgalu; Lugh, SOMALIA.

P.c.; Borelli, 1925a: 324-325; Duca degli Abruzzi, SOMALIA.

P.c.; Borelli, 1925b: 16; Bardera; Balad, SOMALIA.

P.c.; Moriggi, 1941: 94; Lugh; Bardera; Balad; Arigalgalu; Abdeh; Hargeisa; Silul; Turfa, SOMALIA.

Pandinus (Pandinoides) militaris Pocock, 1900

P.m. Pocock, 1900b: 61-62; Aimola, Boran country, SOMALILAND.

Ndi, Weiss Road, inland from Mombasa, British East Africa.

RECORDS:

P.m.; Birula, 1915a: 29-30; Boran country, SOMALILAND.

P.m.; Moriggi, 1941: 96; Aimola, Galla e Sidama, SOMALIA.

P.m.; Roewer, 1943: 229; Dufile, Lado district, SUDAN.

Pandinus (Pandinoides) platycheles Werner, 1916

P.p. Werner, 1916: 89-90; Harrar, Abyssinia.

RECORDS:

P.p.; Caporiacco, 1937b: 360; Gardo; El Donfar, (Migiurtinia) SOMALIA.

P.p.; Moriggi, 1941: 95; Gardo; El Donfar, SOMALIA.

Subgenus Pandinops Birula, 1913Pandinus (Pandinops) colei (Pocock, 1896)

Scorpio c. Pocock, 1896b: 180-181, pl.xi, fig.2; Goolis Mts,

N.SOMALILAND.

RECORDS:

P.c.; Kraepelin, 1899: 121; N.SOMALILAND.

P.c.; Pocock, 1900b: 59; Berbera; Goolis Mts, SOMALILAND.

P.c.; Moriggi, 1941: 94; Berbera; Goolis region, SOMALIA.

Pandinus (Pandinops) hawkeri Pocock, 1900

P.h. Pocock, 1900b: 60-61; Jifa Uri inland from Zeyla, SOMALILAND.

RECORDS:

P.h.; Caporiacco, 1939: 306; Neghelli, SOMALIA.

P.h.; Moriggi, 1941: 96; Neghelli, Galla e Sidama; Jifa Uri, SOMALIA.

Pandinus (Pandinops) peeli Pocock, 1900

P.p. Pocock, 1900b: 53, pl.4, fig.2; N.-W.SOMALILAND.

RECORDS:

P.p.; Borelli, 1919: 374; Merka; Berbera (Type of Pocock), SOMALIA.

P.p.; Borelli, 1925b: 16; Giumbo (Basso Giuba), SOMALIA.

P.p.; Moriggi, 1941: 95; Merca; Giumbo; Berbera; Hargeisa, SOMALIA.

Pandinus (Pandinops) pugilator Pocock, 1900

P.p. Pocock, 1900b: 52-53, pl.4, fig.1; N.-W.SOMALILAND.

RECORDS:

P.p.; Moriggi, 1941: 96; Berbera; Hargeisa, SOMALIA.

Subgenus Pandinurus Vachon, 1974Pandinus (Pandinurus) arabicus (Kraepelin, 1894)

Scorpio a. Kraepelin, 1894: 58-60, fig.10; Homran, Yemen, ARABIA.

RECORD:

P.a.; Kraepelin, 1899: 120; Homran, ARABIA.

P.a.; Vachon, 1966: 215; ARABIA.

P.p.a.; Vachon & Kinzelbach, 1987: 100; SAUDI ARABIA.

Pandinus (Pandinurus) bellicosus (L.Koch, 1875)

Heterometrus b. L.Koch, 1875: 1-4, pl.1, fig.1; Cairo, EGYPT.
(Berl.Mus.). [Abyssinia. See the remark below.]

RECORDS:

Scorpio b.; Pocock, 1899b: 397-398; Aimola, Boran Country, SOMALILAND.
P.b.; Kraepelin, 1899: 121; Habal; Massaua; Keren, ERITREA.

P.b.; Moriggi, 1941: 94; Cheren; Massaua; Valle dell'Anseba, ERITREA.

Remark. This species is erroneously recorded from Cairo, Egypt by
L.Koch (1875), Pocock (1888) and Lamoral (1975). Simon (1910)
had corrected the mistake of Koch.

Pandinus (Pandinurus) citernii Borelli, 1919

P.c. Borelli, 1919: 378-381; Dolo, rive del Ganale Doria, SOMALIA.
RECORD:

P.c.; Moriggi, 1941: 95; Dolo, rive del Ganale Doria, SOMALIA.

Pandinus (Pandinurus) exitialis (Pocock, 1888)

Scorpio e. Pocock, 1888: 249-251; Shoa, Abyssinia.

RECORDS:

P.e.; Moriggi, 1941: 94; Artu; Bellana; Cioba, Scioa, ETHIOPIA &
ERITREA.

P.e.; Roewer, 1943: 229; ERITREA.

P.e.; Vachon, 1966: 215; ARABIA.

Pandinus (Pandinurus) gregoryi (Pocock, 1896)

Scorpio gregorii Pocock, 1896a: 432-435, pl.18, fig.3,3a; Kinani;
Tanganyika, confluence of the Athi; Tzavo.

RECORDS:

P.pallidus g.; Kraepelin, 1899: 120; SOMALILAND.

P.g.; Borelli, 1919: 372-373; Brava; Mogadiscio; Gelib e Margherita;
Riva sinistra del Giuba, SOMALIA.

P.g.; Borelli, 1925a: 324-325; Cuban Cubu; Duca degli Abruzzi;
Giobar (Benadir), SOMALIA.

P.g.; Borelli, 1925b: 16; Giumbo (Basso Giuba), SOMALIA.

P.g.; Caporiacco, 1936a: 142; Belet Amin, SOMALIA.

P.g.; Caporiacco, 1937: 360; Vittorio d'Africa; Villaggio Duca degli
Abruzzi; Mansur; Magadi; Tigiglo, SOMALIA.

P.g.; Moriggi, 1941: 94; Ghengir; Belet Amin; Brava; Giumbo; Geliba
Margherita; Mogadiscio; Vittorio d'Africa; Villaggio Duca degli
Abruzzi; Mansur; Tigiglo, SOMALIA.

Pandinus (Pandinurus) magretti Borelli, 1901

P.m. Borelli, 1901: 1-5; Keren, ERITREA.

RECORDS:

P.exitialis sudanicus; Hirst, 1911a: 219; Gebel Mel, S of Obeid, SUDAN

P.m.; Borelli, 1915: 462; Keren; Chena-fena; Quartoni; Nefassit-Ghinda
ERITREA.

P.m.; Birula, 1928: 85-86; Kassala Province, SUDAN.

P.m.; Moriggi, 1941: 96; Cheren; Barentu; Chenafena; Nefassit; Ghinda
Mai Nefellis, ERITREA.

Pandinus (Pandinurus) meidensis Karsch, 1879

P.m. Karsch, 1879: 127; Meid, SOMALILAND.

RECORDS:

Scorpio m.; Pocock, 1888: 255; SOMALILAND.

P.m.; Kraepelin, 1899: 119; Meid, SOMALILAND.

P.m.; Pocock, 1900b: 58; Meid, SOMALILAND.

P.m.; Moriggi, 1941: 94; Meid, SOMALIA.

Pandinus (Pandinurus) pallidus (Kraepelin, 1894)
 Scorpio p. Kraepelin, 1894: 60-62, fig.11; Baravez, ?SUMATRA.
 RECORDS:

- P.p.; Kraepelin, 1899: 120; Barawa, SOMALILAND.
 P.p.; Pocock, 1900b: 58; Barawa, SOMALILAND.
 P.p.; Masi, 1912: 132-138; Benadir, Mogadiscio, SOMALIA.
 P.p.; Birula, 1915a: 28-29; Barawa, SOMALILAND.
 P.p.; Borelli, 1919: 373-374; Rahanuin; Lugh; Adama; Mogadiscio, SOMALIA.
 P.p.; Borelli, 1925a: 325-326; Duca degli Abruzzi, SOMALIA.
 P.p.; Borelli, 1925b: 16; Bardera; Gumbo (Basso Giuba); Afgoi; Mogadiscio, SOMALIA.
 P.p.; Caporiacco, 1927a: 60; Mogadiscio; Giuhar, SOMALIA.
 P.p.; Birula, 1928: 84-85; Nubagebirge, Dilling; Gebel-Semma, Kadugli, SUDAN.
 P.p.; Borelli, 1929: 299-300; Um Dona Koalib, Nuba Mountains Province, SUDAN.
 P.p.; Moriggi, 1941: 95; Adama; Brava; Lugh; Mogadiscio; Giuhar; Rahanuin; Bardera; Afgoi; Gumbo, SOMALIA.

Pandinus (Pandinurus) percivali Pocock, 1902
 P.p. Pocock, 1902: 368.
 RECORDS:

- P.p.; Vachon, 1966: 215; ARABIA.
 P.p.p.; Vachon & Kinzelbach, 1987: 100; S.YEMEN.

Subgenus Pandinus Thorell, 1876

Pandinus (Pandinus) imperator (C.L.Koch, 1842)
 Buthus i. C.L.Koch, 1842: 1-2, fig.695; unknown type locality.
 RECORDS:

P.africanus; Pavesi, 1895a: 39; Obbia, SOMALIA.
Pandinus (Pandinus) imperator subtypicus Kraepelin, 1894

Scorpio africanus s. Kraepelin, 1894: 69-70; East Africa.
 RECORDS:

- P.i.s.; Kraepelin, 1899: 123; Djur region, SUDAN.
 P.i.s.; Caporiacco, 1927b: 115; SOMALIA.
 P.i.s.; Moriggi, 1941: 93; Habab, ERITREA. Bela; Obbia; Mogadiscio, SOMALIA.

Pandinus (Pandinus) intermedius Borelli, 1919
 P.i. Borelli, 1919: 375-378; Dolo, rive del Ganale Doria, SOMALIA.
 RECORD:

- P.i.; Moriggi, 1941: 95; Dolo, rive del Ganale Doria, SOMALIA.

Pandinus (Pandinus) phillipsi (Pocock, 1896)
 Scorpio phillipsii Pocock, 1896b: 181-182; Doolob, inland of Berbera, SOMALILAND.

- RECORDS:
 P.p.; Kraepelin, 1899: 120; Doolob, Berbera, SOMALILAND.
 P.p.; Pocock, 1900b: 58-59; Doolob, Goolis Mountains, SOMALILAND.
 P.p.; Borelli, 1925a: 326; Duca degli Abruzzi, SOMALIA.
 P.p.; Moriggi, 1941: 95; Doolob, SOMALIA.

Pandinus (Pandinus) smithi (Pocock, 1899)
 Scorpio smithii Pocock, 1899b: 398-400; Silul; Hargesa, SOMALILAND.
 RECORDS:
 P.s.; Pocock, 1900b: 58; Hargaisa; Silul; Abdeh; Turfa, SOMALILAND.

Scorpio s.; Simon, 1904: 444; SOMALIA.

P.s.; Borelli, 1919: 372; Uebi Mane, SOMALIA.

P.s.; Moriggi, 1941: 95; Uebi Mane; Ghegnir, Uabi Daroli, Monti Aubo; Abdeh; Hargeisa; Silul; Turfa; Pease dei Somalia, SOMALIA.

Genus *Scorpio* Linnaeus, 1758

Scorpio maurus Linnaeus, 1758

S.m. Linnaeus, 1758: 624; Africa.

RECORDS:

S.m.; Werner, 1902: 602; Lambesa; Batna, east ALGERIA.

Heterometrus m.; Pallary, 1934: 99-100; Boutilimit, MAURITANIA.

S.m.m.; Vachon, 1952a: 333-340, figs. 477-498; Alger, ALGERIA. Ain Draham; Jardins d'essai de Tunis; ruines d'Utique, TUNISIA.

S.m.; Vachon, 1966: 215; LEBANON. JORDAN.

S.m.; Wahbeh, 1976: 89; Ajlun; Amman; Theban; Wadi-Musa, JORDAN.

S.m.; El-Hennawy, 1988a: 19; Ajlun; Amman; Dhiban; Petra; Salt; Wadi Deba'; Wadi Musa; Wadi Rum; desert highway, north-east of Aqaba, JORDAN.

S.m.; Moustafa, 1988: 49-52, 77, figs. 12, 29; St. Catherine; Wadi Feiran, S. Sinai, EGYPT.

S.m.; Amr et al, 1988: 375; Wadi Musa; Theban; Aman; Ajlun, JORDAN.

Scorpio maurus arabicus (Pocock, 1900)

Heterometrus a. Pocock, 1900c: 363; ARABIA.

RECORD:

S.m.a.; Vachon, 1966: 215; ARABIA.

Scorpio maurus behringsi Schenkel, 1949

S.m.b. Schenkel, 1949: 193.

RECORD:

S.m.b.; Levy & Amitai, 1980: 105; MOROCCO

Scorpio maurus berytensis (Simon, 1884)

Heterometrus m. var. berytensis Simon, 1884: 191-192; near Beirut and at Nahr-el-Kelb, LEBANON.

Scorpio maurus fuliginosus (Pallary, 1928)

Heterometrus f. Pallary, 1928: 346-348, figs. 1, 1a; Djebel Ouirgane, Grand Atlas, MOROCCO.

RECORDS:

S.m.f.; Vachon, 1952a: 351-354, figs. 522-527; Cirque d'Arround, Skoutana; Grand Atlas, Kasba de Taguendaft, Goundafa; Ouirgane; Amerzouacht; Telouet, S-E of Marrakech; Toubkal: Agoudir valley, confluent de l'Iminan et de l'Ait Mizane; Asni; Tizi n'Test; Sidi Fars, south of Marrakech, MOROCCO.

Scorpio maurus fuscus (Hemprich & Ehrenberg, 1829)

Buthus (Heterometrus) palmatus f. Hemprich & Ehrenberg, 1829: 116; Beirut, LEBANON.

RECORDS:

S.f.; Werner, 1902: 602; Latakiah, SYRIA.

S.m.f.; Pringle, 1960: 85-86, fig. 10; Sersing; south-east of Baghdad, IRAQ.

S.m.f.; Khalaf, 1962: 2; Sersang; Abou-Saida, IRAQ.

S.m.f.; Vachon, 1966: 215; ARABIA. PALESTINE. SYRIA.

S.m.f.; Vachon, 1979: 57-59, figs. 43, 45; camp Khamis Mushayt; Road Taif-Abha, 200-300 km south of Taif, SAUDI ARABIA.

S.m.f.; Levy & Amitai, 1980: 112-114, figs. 96-98, map 8; From the north to the Judean Mountains and along the Jordan Valley to

- about Jiftlik (40 km south of Bet She'an), PALESTINE.
 Latakieh; Djeroud (60 km northeast of Damascus), SYRIA.
 'En Zahalte; Beirut; Nahr-el-Kalb, LEBANON.
- S.m.f.; Kinzelbach, 1984: 101; Damascus (near river Barada), SYRIA.
 S.m.f.; Kinzelbach, 1985: PALESTINE. JORDAN. LEBANON. SYRIA.
 SAUDI ARABIA.
- S.m.f.; Amr et al, 1988: 375; North of JORDAN.
Scorpio maurus hesperus Birula, 1910
- S.m.h. Birula, 1910: 148-151.
 RECORDS:
- S.m.h.; Vachon, 1952a: 340-343, figs.499-504; near Tanger, N MOROCCO.
 S.m.h.; Levy & Amitai, 1980: 105; Tangier, N.MOROCCO.
Scorpio maurus kruglovi Birula, 1910
- S.m.k. Birula, 1910: 180-184.
 RECORDS:
- S.m.k.; Pringle, 1960: 85-86; Dohuk-Aqra; Dyana-Rowanduz; Tel Afar;
 south Rutba (Syrian Desert), IRAQ.
- S.m.k.; Khalaf, 1962: 2; Dohuk-Aqra; Diana-Rowanduz; Tal-Afar;
 Rutba, IRAQ.
- S.m.k.; Vachon, 1966: 215; IRAK.
- S.m.k.; Vachon, 1979: 57, figs.40,42,45,51-53; Wadi Hanifa; petrified
 forest near Riyadh, SAUDI ARABIA.
- S.m.k.; Kinzelbach, 1985: JORDAN. SYRIA. IRAK. KUWAIT. QATAR.
 SAUDI ARABIA.
- S.m.k.; Amr et al, 1988: 375; Eastern desert of JORDAN.
Scorpio maurus legionis Werner, 1932
- S.m.l. Werner, 1932: 289.
 RECORD:
- S.m.l.; Levy & Amitai, 1980: 105; Grand Atlas, MOROCCO
Scorpio maurus mogadorensis Birula, 1910
- S.m.m. Birula, 1910: 147-148.
 RECORDS:
- S.m.m.; Vachon, 1952a: 348-351, figs.516-521; Mogador; Ida ou Guerd,
 S-E Mogador (15 km of the coast), MOROCCO.
- S.m.m.; Levy & Amitai, 1980: 105; Agadir to Rabat, W.MOROCCO.
Scorpio maurus occidentalis Werner, 1936
- S.m.o. Werner, 1936: 184-185.
 RECORDS:
- S.m.o.; Vachon, 1952a: 358-360, figs.536-539; Boutilimit, MAURITANIA.
 S.m.o.; Vachon, 1953: 1024-1025, fig.14; Boutilimit, MAURITANIA.
Scorpio maurus palmatus (Hemprich & Ehrenberg, 1829)
- Buthus (Heterometrus) p.rufus & flavus Hemprich & Ehrenberg, 1829:116;
 Sinai, EGYPT. LIBYA.
- RECORDS:
- Buthus p.; Lucas, 1849: 272-273, pl.18, fig.2; near: Constantine;
 Milah; Setif; Bone; cercle de Lacalle, E ALGERIA.
- Heterometrus p.; Simon, 1910: 82, figs.14,15; near Alexandria; Cairo;
 Fayoum, EGYPT.
- Heterometrus p.; Gough & Hirst, 1927: 5; Cairo, EGYPT. Bir Salim,
 Jaffa, PALESTINE.
- Heterometrus p.; Pallary, 1929: 141; Ameri, Hoggar, ALGERIA.
 Heterometrus p.; Pallary, 1934: 98; Ameri, Hoggar, ALGERIA.
- S.m.p.; Vachon, 1966: 215; EGYPT. PALESTINE.

S.m.p.; Levy & Amitai, 1980: 106-111, figs.91-95, map 8; Southern PALESTINE. Alexandria; Wadi Natrun; Cairo; Faiyum; Northern and central Sinai, EGYPT. Cyrenaica, LIBYA. As-Salt; Wadi Deba' (100 km southeast of Amman), JORDAN.

S.m.p.; Kinzelbach, 1984: 101; Wadi Ram; Petra; Desert Highway, 65 km north of Aqaba, JORDAN.

S.m.p.; Kinzelbach, 1985: LIBYA. SUDAN. EGYPT. PALESTINE. JORDAN.

S.m.p.; Amr et al, 1988: 375; Es Salt; South-West of JORDAN.

Scorpio maurus propinquus (Simon, 1872)

Heterometrus p. Simon, 1872: 259; Damascus, SYRIA.

RECORDS:

S.m.p.; Vachon, 1966: 215; PALESTINE. SYRIA.

S.m.p.; Levy & Amitai, 1980: 104-106; Damascus, SYRIA.

Scorpio maurus stemmleri Schenkel, 1949

S.m.s. Schenkel, 1949: 194.

RECORD:

S.m.s.; Levy & Amitai, 1980: 105; Demnat, MOROCCO

Scorpio maurus subtypicus Birula, 1910

S.m.s. Birula, 1910: 151-153.

RECORDS:

S.m.s.; Vachon, 1952a: 343-345, figs.505-510; centre de l'Andjera, N MOROCCO.

S.m.s.; Levy & Amitai, 1980: 105; Mediterranean coast, Spanish MOROCCO

Scorpio maurus testaceus Penther, 1912

S.m.t. Penther, 1912: 114-115; Kal'at Shergat; Mosul; Haitsche (Heseke), IRAK.

RECORD:

S.m.t.; Khalaf, 1962: 2; Mosul; Shergat, IRAQ.

Scorpio maurus tunetanus Birula, 1910

S.m.t. Birula, 1910: 161-163.

RECORDS:

S.m.t.; Borelli, 1914: 159; Misurata; Homs; Gharian, LIBYA.

S.m.t.; Borelli, 1927: 353-354; Amseat, Porto Bardia, LIBYA.

S.m.t.; Caporiacco, 1937a: 348; Gat, LIBYA.

S.m.t.; Vachon, 1952a: 346-348, figs.511-515; Montagnes centrales; Gafsa; Maknassy, TUNISIA. near Djelfa, ALGERIA.

S.m.t.; Levy & Amitai, 1980: 105; TUNISIA. ALGERIA. MOROCCO.

Scorpio maurus weidholzi Werner, 1929

S.m.w. Werner, 1929: 32-34.

RECORDS:

S.m.w.; Vachon, 1952a: 354-357, figs.528-535; Marrakech, rives du Tensift, MOROCCO.

S.m.w.; Levy & Amitai, 1980: 105; Marrakesh, MOROCCO

Scorpio maurus yemenensis Werner, 1936

S.m.y. Werner, 1936: 183-184; YEMEN.

RECORD:

S.m.y.; Vachon, 1966: 215; ARABIA.

Superfamily Vaejovoidea

Family Chactidae Pocock, 1893

Genus Euscorpius Thorell, 1876

Euscorpius carpathicus (Linnaeus, 1767)

RECORDS:

E.c.; Simon, 1910: 83; Alexandria, EGYPT.?

E.c.; Borelli, 1927: 354-355; Amseat, Porto Bardia, LIBYA.

Euscorpius carpathicus sicanus (C.L.Koch, 1839)

RECORD:

E.c.s.; Vachon, 1952a: 362, figs.540,542; Ile de Djamour, between Kroumbalia and Hammamet, on djebel Resas, TUNISIA.

Euscorpius flavicaudis (De Geer, 1778)

Euscorpius flavicaudis algeriacus (C.L.Koch, 1839)

Scorpio a. C.L.Koch, 1839a: 163, pl.145, figs.340,341.

RECORD:

E.f.a.; Vachon, 1952a: 364-365; near Alger, ALGERIA.

Euscorpius flavicaudis galitae Caporiacco, 1950

RECORDS:

Scorpius flavicaudus; Lucas, 1849: 273; L'ile de la Galite, TUNISIA. near Tlemsan, ALGERIA.

E.f.g.; Vachon, 1952a: 364-365, figs.540,543-549; Ile de la Galite, TUNISIA.

Euscorpius germanus (C.L.Koch, 1836)

Scorpius g. C.L.Koch, 1836: 110.

RECORD:

E.g.; Vachon, 1966: 214; SYRIA.

Subgenus **Polytrichobothrius** Birula, 1917

Euscorpius (Polytrichobothrius) italicus (Herbst, 1800)

Scorpio i. Herbst, 1800: 70.

RECORDS:

E.i.; Vachon, 1952a: 362, figs.540,541; Rabat, MOROCCO.

E.(P.)i.; Vachon, 1966: 214; ARABIA ?.

REFERENCES

- Al-Safadi, M.M. In Press.
- * Additions to the scorpion fauna of Yemen.
- Amoreux, M. 1789
Description méthodique d'une espèce de Scorpion roux commune à Souvignargues en Languedoc et détails historiques a ce sujet.
J.Physiol., Paris, 35: 9-16, 3 figs.
- Amr, Z.S., Hyland, K.E., Kinzelbach, R., Amr, S.S. & Defosse, D. 1988
- * Scorpions et piqures de scorpions en Jordanie.
Bull.Soc.Path.Ex. 81: 369-379.
- Audouin, V. 1825
- * Explication sommaire des planches d'Arachnides de l'Égypte et de la Syrie, publiées par Jules-César Savigny.
In: Description de l'Égypte, ou Recueil des observations et des recherches qui ont été faites en Égypte pendant l'expédition de l'armée française. Histoire Naturelle. Tome Premier 1809. Paris. 4e partie, pp.99-186. [Scorpions: pp.172-178, pl.8, figs.1-3.]
----- 1827
- * Idem. Ibid. 2nd edition. vol.22, pp. 291-430.
[Scorpions: pp.410-412, pl.8, figs.1-3.]
- Birula, A. 1900
Beiträge zur Kenntnis der Skorpionenfauna Ost-Persiens.
Bull.Acad.imp.Sci., St.Petersbourg, 12(4): 355-375.
----- 1903
Bemerkungen über einige neue oder wenig bekannte Skorpionenformen Nord-Afrikas.
Bull.Ac.St.Petersb., 19(3): 105-113.
----- 1905a
Beiträge zur Kenntnis der Skorpionenfauna Persiens (dritter Beitrag).
Bull.Acad.imp.Sci., St.Petersbourg, 23(1-2): 119-148.
----- 1905b
Scorpiologische Beiträge.
Zool.Anz. 29: 621-624.
----- 1908
Ergebnisse dermit Subvention aus der Erbschaft Treitl unternommenen zoologischen Forschungsreise Dr F.Werner's nach dem ägyptischen Sudan und Nord-Uganda. XIV.Scorpiones und Solifugae.
Sber.Akad.Wiss.Wien 117, Heft 2 Abth. 1: 121-152.
----- 1909
Scorpione und Solifugen von Tripolis und Barka. Nach der Sammlung von Dr.Bruno Klaptoch im Jahre 1906.
Zool.Jb.Syst., 28: 505-522.
----- 1910
Ueber Scorpio maurus Linné und seine Unterarten.
Horae Soc.ent.Ross. 39: 115-192.
----- 1911
Scorpiologische Beiträge. No.3.
Zool.Anz. 37(6-7): 137-142.
----- 1914
Ergebnisse einer von Prof.Franz Werner...nach Algerien.
VI. Skorpione und Solifugen.
Sitz.Kais.Akad.Wiss.Wien 123: 633-668, 4 figs.

- , 1915a
A general list of the Scorpions of British East Africa.
Sci. Res. zool. exp. to British E. Africa and Uganda made by
Prof. V. Dogiel and I. Sokolow 9: 1-31 (English abstract).
- , 1915b
Arachnologische Beiträge. VI. Ueber die nordost-afrikanischen
Formen von Parabuthus liosoma (H & E).
Rev. Russ. Ent. Petrogr. 15(2): 131-146.
- , 1918
Miscellanea scorpologica XI. Matériaux pour servir à la
scorpiofaune de la Mesopotamie inferieure, du Kurdistan
et de la Perse septentrionale.
Ann. Mus. Zool. Sc. Russie 22: 1-35.
- , 1928
Wissenschaftliche Ergebnisse der mit Unterstützung der Akademie der
Wissenschaften in Wien aus der Erbschaft treitl von F. Werner
unternommenen Zoologischen Exped. nach dem Anglo-Ägyptischen Sudan
(Kordofan) 1914. XXV. Skorpione.
Denschr. Akad. Wiss. Wien 101: 79-88.
Resumé in Anz. Akad. Wiss. Wien 64, 1927; 100 pp.
- Boehm, R. 1912
* Note sur Orthochirus innesi E. Simon (Scorpions).
Bull. Soc. ent. Egypte 3: 27.
- Borelli, A. 1901
Scorpioni. Materiali per la conoscenza della fauna Eritraea
raccolti del D. P. Magretti.
Boll. Mus. Torino 16(384): 1-5.
- , 1902
Di una nuova specie di scorpione della Colonia Eritrea.
Boll. Mus. Torino 17(422): 3 pp.
- , 1904
Di alcuni scorpioni della Colonia Eritrea.
Boll. Mus. Torino 19(463): 1-5.
- , 1914
* Contributo allo Studio della Fauna Libica. Materiali raccolti
nelle zone di Misurata e Homs (1912-13) dal Dott. Alfredo
Andreini, Capitano Medico. Scorpioni.
Ann. Mus. Civ. st. nat. Genova Serie 3a, 6(46): 148-159.
- , 1915
Gli scorpioni del Museo Civico di Storia Naturale di Milano.
Atti. Soc. ital. sc. nat. 53: 456-464.
- , 1919
* Missione per la Frontiera Italo Etiopica Sotto il Comando del
Capitano Carlo Citerri. Risultati Zoologici. Scorpioni.
Ann. Mus. Civ. st. nat. Genova 8(3): 359-381.
- , 1925a
* Di alcuni Scorpioni della Somalia Italiana.
Ann. Mus. Civ. st. nat. Genova 51: 316-326.
- , 1925b
* Scorpioni nuovi o poco noti della Somalia Italiana.
Ann. Mus. Civ. st. nat. Genova 52: 9-16.
- , 1927
* Risultati zoologici della Missione inviata dalla R. Società
Geografica Italiana per l'Esplorazione dell'Oasi di Giarabub
(1926-1927). Scorpioni e Solifughi.
Ann. Mus. Civ. st. nat. Genova 52: 346-355.

- , 1929
 Scorpions du Soudan.
 Ann.Mag.Nat.Hist. (10)3: 297-300, 1 pl.
- , 1930-1931
- * Spedizione del Barone Raimondo Franchetti in Dancalia.
 Scorpione e Solifughi.
 Ann.Mus.Civ.st.nat.Genova 55: 218-219.
- Caporiacco, L. Di 1927a
 Scorpioni e Solifugi raccolti in Somalia dai Prof.Stefanini
 e Puccioni nel 1924.
 Mon.Zool.Ital.Firenze 38: 58-62.
- , 1927b
 Arachnidi di Mogadiscio.
 Mem.Soc.ent.ital.Genova 17(1): 115-117.
- , 1932a
 Arachnidi.
 Boll.Zool., Napoli 3(5): 233-238, 5 figs.
- , 1932b
- * Spedizione Scientifica all'Oasi di Cufra (Marzo-Luglio 1931).
 Scorpioni e Solifugi.
 Ann.Mus.Civ.st.nat.Genova 55: 395-408.
- , 1936a
- * Scorpioni, Pedipalpi, Solifugi e Chernetidi di Somalia e Dancalia.
 Ann.Mus.Civ.st.nat.Genova 58: 135-149.
- , 1936b
- * Arachnidi raccolti durante la Primavera 1933 nelle Oasi del Deserto
 Libico.
 Mem.Soc.ent.It., Genova 15(1): 93-122.
- , 1937a
- * Risultati Scientifici della Missione del Prof.G.Scortecci
 nel Fezzan e sui Tassili (1936). Scorpioni e Solifughi.
 Atti.Soc.Ital.Sc.Nat.Milano 76(3): 340-354.
- , 1937b
- * Su alcuni Scorpioni dell'Africa Orientale Italiana del
 Civico Museo di Milano.
 Atti.Soc.Ital.Sc.Nat.Milano 76(3): 355-362.
- , 1939
 Arachnida. Missione Biol.
 Paese dei Borana, Roma 3(2): 303-385, 27 figs.
- , 1941
 Arachnida (Esc. Acarina).
 Miss.Biol.Sagan-Omo Zool. 6: 21-175, figs.1-71.
- El-Hennawy, H.K. 1988a
- * Scorpions of Jordan.
 Serket 1(2): 13-20.
- , 1988b
- * A new record of *Compsobuthus werner* (Birula) 1908
 (Scorpionida : Buthidae) from Egypt.
 Serket 1(2): 21.
- , 1988c
- * Scorpions of Jordan. Additional Note.
 Serket 1(3): 19.
- , 1990
- * Key to Scorpion Families (Arachnida : Scorpionida).
 Serket 2(1): 14-19.

- , 1991
 * Arachnida of Wadi El-Raiyan (Egypt).
 Serket 2(3): 81-90.
- Fabricius, J.C. 1793
 Entomologiae Systemat. (Hafniae)
- Finnegan, S. 1932
 Report on the Scorpions collected by Mr Bertram Thomas in Arabia.
 J.Linn.Soc.(Zool.) 38(258): 91-98.
- Foley, H. 1945
 * Au sujet d'un Scorpion de la region de Beni-Abbes (Sahara Oranais)
 Buthacus ducrosi Pallary, 1937.
 Bull.Soc.Hist.nat.Afr.Nord. 36(1): 6-7.
- Francke, O.F. 1980
 Revision of the genus Nebo Simon (Scorpiones, Diplocentridae).
 J.Arachnol. 8(1): 35-52.
- , 1985
 * Conspectus Genericus Scorpionorum 1758-1982 (Arachnida: Scorpiones)
 Occ.Pap.Mus.Texas Tech Univ. No.98, 32 pp.
- Giltay, L. 1929
 * Mission Saharienne Augieras-Draper, 1927-1928. Scorpions.
 Bull.Mus.natn.Hist.Nat.Paris, 2e serie, 1(3): 193-197.
- Geer, Ch.de 1778
 Mémoires pour servir a l'histoire des Insects.
 (Stockholm) 7(3-4): 176-324, pls.11-19, 38-39.
- Gough, L.H. & Hirst, S. 1927
 * Key to identification of Egyptian Scorpions.
 Minist.Agric.Egypt, Tech.Scient.Serv., Bull.76: 7pp., 5pls.
- Grube, A.E. 1873
 Über eine Zusendung transkaukasischen Arachniden und Myriapoden.
 Jber.Schles.Ges.Vaterl.Kult.: 56-57.
- Hemprich, F.G. & Ehrenberg, C.G. 1829
 Vorlaufige Uebersicht der in Nord-Afrika und West-Asien
 einheimischen Scorpione und deren geographischen Verbreitung.
 Gesells.Nat.Freunde Verh. 1: 348-362.
- , 1829
 Symbolae Physicae seu Icones et descriptiones Insectorum quae
 ex itinere per Africam borealem et Asiam occidentalem.
 Animalia articulata, Arachnoidea, Scorpiones.
 Berolini ex officina Academica. 12pp., 2pls.
- Herbst, J.F. 1800
 Naturgeschichte der Skorpionen.
 Natursyst.ungefl.Ins., Berlin, 4: 1-86, 7 pls.
- Hirst, A.S. 1907
 Notes on scorpions, with descriptions of two new species.
 Ann.Mag.Nat.Hist. (7)19: 208-211.
- Hirst, S. 1911a
 Scorpions and Solifugae collected by Captain S.S.Flower
 in the Anglo-Egyptian Sudan.
 Ann.Mag.Nat.Hist. (8)7: 217-222.
- , 1911b
 Descriptions of new scorpions.
 Ann.Mag.Nat.Hist. (8)8: 462-473.
- , 1925
 On some scorpions from Morocco, with the description
 of a new genus and species.
 Ann.Mag.Nat.Hist. (9)15: 414-416.

- Karsch, F. 1879
 Skorpiologische Beiträge II.
 Mitt. Münchener Ent. Ver. 3: 97-136.
 -----, 1881
 Verzeichniss der während der Rohlf'schen Afrikanischen Expedition erbeuteten Myriopoden und Arachniden.
 Arch. Naturgesch. 47(1): 1-14, pl. 1.
 -----, 1891
 * Arachniden von Ceylon und von Minikoy.
 Berl. Ent. Zeits. 36(2): 267-310, pls. 10-12. [Sc. 305-307]
 Khalaf, L. 1962
 * A small collection of scorpions from Iraq.
 Bull. Iraq Nat. Hist. Inst. 2(4): 1-3.
 Kinzelbach, R. 1982
 * Die Skorpionssammlung des Naturhistorischen Museums der Stadt Mainz Teil I: Europa und Anatolien.
 Mainzer Naturw. Archiv 20: 49-66.
 -----, 1984
 * Die Skorpionssammlung des Naturhistorischen Museums der Stadt Mainz Teil II: Vorderasien.
 Mainzer Naturw. Archiv 22: 97-106.
 -----, 1985
 * The scorpions of the Near and Middle East.
 Wiesbaden. (Tübinger Atlas des Vorderen Orients. TAVO).
 Koch, C. L. 1836
 Die Arachniden. 3. Nurnberg. 119 pp.
 -----, 1839a
 Die Arachniden. 5. Nurnberg. 158 pp.
 -----, 1839b
 Die Arachniden. 6. Nurnberg. 156 pp.
 -----, 1842
 Die Arachniden. 9. Nurnberg. 102 pp.
 -----, 1875
 * Aegyptische und Abyssinische Arachniden gesammelt von Herrn C. Jickeli. Nurnberg. 96 pp., 7 pls.
 Kraepelin, K. 1891
 Revision der Skorpione. I. Die Familie der Androctonidae.
 Jahrb. Hamburg Wiss. Anst. 8: 1-144, pls. 1-2.
 -----, 1894
 Revision der Skorpione. II. Scorpionidae und Bothriuridae.
 Jahrb. Hamburg Wiss. Anst. 11: 1-248.
 -----, 1898
 Neue Pedipalpen und Skorpione des Hamburger Museums.
 Mitt. zool. st. Inst. Hamb. 15: 1-6, 1 fig.
 -----, 1899
 Scorpiones und Pedipalpi.
 Das Tierreich 8: 1-265, 94 figs.
 -----, 1900
 Ueber einige neue Gliederspinnen.
 Abh. Geb. Naturwis. 16: 1-28.
 -----, 1901a
 Catalogue des Scorpions des collections du Museum d'Histoire Naturelle de Paris.
 Bull. Mus. Hist. nat. Paris 7: 265-274.

- , 1901b
Über einige neue Gliederspinnen.
Abh. Naturwiss. Ver. Hamburg 16(4): 1-17, 12 figs.
- , 1903
Skorpione und Solifugen Nordost-Afrikas, gesammelt 1900 und 1901
von Carlo Freiherrn von Erlanger und Oscar Neumann.
Zool. Jb. (Syst.), 18(4/5): 557-578.
- , 1910
Neue Beiträge zur Systematik der Gliederspinnen.
Jahrb. Hamburg Wiss. Anst. 28(2): 59-107, 1 pl.
- , 1913
Neue Beiträge zur Systematik der Gliederspinnen.
Jahrb. Hamburg Wiss. Anst. 30(2): 123-296.
- Lacroix, J.-B. 1989
* Bibliographie Générale Faune Mondiale (Arachnida : Scorpionida).
Arachnides No.2: 10-22, et No.3: 15-25.
- Lamoral, B.H. & Reynders, S.C. 1975
* A catalogue of the scorpions described from the Ethiopian Faunal
Region up to December 1973.
Ann. Natal Mus. 22(2): 489-576.
- Levy, G. & Amitai, P. 1980
* Fauna Palaestina. Arachnida I. Scorpiones.
Jerusalem. 134 pp.
- Levy, G., Amitai, P. & Shulov, A. 1973
* New scorpions from Israel, Jordan and Arabia.
Zool. J. Linn. Soc. 52: 113-140, 48 figs.
- Linnaeus, C. 1758
* Systema Naturae. Tomus I. Editio Decima. Holmiae (Stockholm).
[Scorpio pp.624-625]
- Lucas, H. 1849
* Exploration Scientifique de L'Algerie pendant les années 1840,
1841, 1842. Sciences Physiques. Zoologie I. Histoire Naturelle
des Animaux Articulés. Première Partie: Crustacés, Arachnides,
Myriapodes et Hexapodes. xxxv + 403 pp. [Arachnides: pp.89-321;
Les Scorpionides: pp.271-278] Zoologie IV. Atlas. [Arachnides:
22 pls.; Sc.: pl.18, figs.1,2].
- Masi, L. 1912
Note sugli Scorpioni appartenenti al R. Museo zoologico di Roma.
Boll. Soc. zool. Ital. (3)1: 88-108, 120-144.
- Moriggi, M. 1941
Gli scorpioni dell'Africa Orientale Italiana.
Riv. Biol. Colon. Roma 4(1-2): 77-103.
- Moustafa, A.A. 1988
* Studies on Scorpions in St. Catherine and Wadi Feiran regions,
S. Sinai. M.Sc. Thesis, Suez Canal Univ., 145 pp.
- Nordmann, A. von 1840
Notice sur les Scorpions de la faune pontique. (pp.751-752).
In: Observations sur la faune pontique, Voyage dans la Russie
Meridionale et la Crimée (Demidov, A.A.). pp. 1-756.
- Olivier, G.A. 1807
Voyage dans l'Empire Othoman, l'Égypte et la Perse.
Vol.3 et Atlas. Paris.
- Pallary, P. 1924
Description de trois Scorpions nouveaux du Maroc.
Arch. Inst. Pasteur Alger. 2(2): 219-222.

- , 1928
 * Description de quatre scorpions nouveaux de la Berbérie.
 Bull. Mus. natn. Hist. Nat. Paris 34(5): 346-351.
- , 1929
 * Les scorpions du Sahara Central.
 Bull. Soc. Hist. nat. Afr. Nord. 20(7): 133-141.
- , 1934
 * Scorpions du Sahara Central.
 Mem. Soc. Hist. nat. Afr. Nord. 4: 90-100.
- , 1938
 Sur des scorpions de la Berbérie, de la Syrie et du Congo.
 Arch. Inst. Pasteur Alger 16(3): 279-282.
- Pavesi, P. 1885
 Aracnidi raccolti dal conte Bouturlin ad Assab e Massaua.
 Bull. Soc. ent. Ital. Firenze 17: 197-200.
- , 1895a
 Aracnidi raccolti nel Paese dei Somali
 dall'Ing L. Bricchetti-Robecchi.
 Boll. scient. 17: 37-46.
- , 1895b
 * Esplorazione del Giuba e dei suoi affluenti compiuta del
 Cap. V. Bottego durante gli anni 1892-93. 18. Aracnidi.
 Ann. Mus. Civ. st. nat. Genova serie 2a, vol. 15(35): 491-537. [Sc. 495-6]
- , 1897
 * Studi sugli Aracnidi Africani. IX. Aracnidi Somali e Galla
 raccolti da Don Eugenio dei Principi Ruspoli.
 Ann. Mus. Civ. st. nat. Genova serie 2a, vol. 18(38): 151-188. [Sc. 156-8]
- Penther, A. 1912
 * Wissenschaftliche Ergebnisse der Expedition nach Mesopotamien, 1910.
 Scorpiones.
 Ann. Naturh. Mus. Wien 26(1/2): 109-115.
- Peters, W. 1862a
 Eine neue Untergattungen von Scorpionen.
 Mon. Akad. Wiss. Berlin 26: 426-427.
- , 1862b
 Ueber eine neue Eintheilung der Skorpione.
 Mon. Akad. Wiss. Berlin 26: 507-516.
- Pocock, R. I. 1888
 On the African specimens of the genus Scorpio (Linn.),
 contained in the collection of the British Museum.
 Ann. Mag. nat. Hist. (6)2: 245-255.
- , 1889
 Notes on some Buthidae, new and old.
 Ann. Mag. nat. Hist. (6)3: 334-351.
- , 1890a
 A revision of the genera of scorpions of the family Buthidae,
 with descriptions of some S. African species.
 Proc. zool. Soc. Lond. 1890: 114-141, 2 pls.
- , 1890b
 Description of two new species of scorpions brought by Emin Pasha
 from the inland parts of East Africa.
 Ann. Mag. nat. Hist. (6)6: 98-101.
- , 1891
 Notes on some scorpions collected by Mr J. J. Walker, with
 descriptions of two new species and a new genus.
 Ann. Mag. nat. Hist. (6)8: 241-247.

- 1895
 * On the Arachnida and Myriopoda obtained by Dr. Anderson's collector during Mr. T. Bent's Expedition to the Hadramaut, South Arabia; with a Supplement upon the Scorpions obtained by Dr. Anderson in Egypt and the Eastern Soudan.
 J.Linn.Soc.(Zool.) 25: 292-316, pl.IX.
- 1896a
 On the Scorpions, Centipedes, and Millipedes obtained by Dr Gregory on his expedition to Mt Kenia, East Africa.
 Ann.Mag.nat.Hist. (6)17: 425-444, pl.xviii.
- 1896b
 Report upon the Scorpions, Spiders, Centipedes, and Millipedes obtained by Mr & Mrs E.Lort-Phillips in the Goolis Mts., inland of Berbera, N.Somaliland
 Ann.Mag.nat.Hist. (6)18: 178-189.
- 1897
 Descriptions of new species of scorpions from India.
 J.Bombay Soc. 11: 102-117.
- 1899a
 Descriptions of some new species of scorpions.
 Ann.Mag.nat.Hist. (7)3: 411-420.
- 1899b
 Solifugae, Scorpions, Chilopoda, and Diplopoda. Appendix C to Donaldson Smith's Through Unknown African Countries: 392-407.
- 1899c
 The expedition to Sokotra. Description of the new species of Scorpions, Centipedes, and Millipedes.
 Bull.Liverp.Mus. 2: 7-9.
- 1900a
 On a collection of Insects and Arachnids made in 1895 and 1897 by Mr C.A.V.Peel, F.Z.S. in Somaliland, with descriptions of new species. IX. The Chilopoda and Arachnida.
 Proc.zool.Soc.Lond. 1900: 48-55, pls.iii, iv.
- 1900b
 X.General list of the Scorpions of Somaliland and the Boran Country
 Proc.zool.Soc.Lond. 1900: 55-63, pl.iv.
- 1900c
 The Scorpions of the Genus Heterometrus.
 Ann.Mag.nat.Hist. (7)6: 362-365.
- 1901
 On a new species of the genus Parabuthus.
 Boll.Mus.Torino xvi(382): 1 p.
- 1902
 A contribution to the Systematics of Scorpions.
 Ann.Mag.nat.Hist. (7)10: 364-380.
- Pohl, A. 1967
 * Zuordnung der Art Buthus voelschowi Werner, 1902 zum Formenkreis Leiurus quinquestriatus H.et E., 1829 (Arachnida, Scorpiones).
 Ann.Naturhistor.Mus.Wien 70: 209-215.
- Polis, G.A. (Ed.) 1990
 * The Biology of Scorpions. 587pp.
 Stanford University Press, Stanford, California.
- Pringle, G. 1960
 * Notes on the scorpions of Iraq.
 Bull.Endemic Diseases 3: 73-87.

- Probst, P.J. 1973
A review of the Scorpions of East Africa with special regard to Kenya and Tanzania.
Acta Tropica 30(4): 312-335.
- Roewer, C.F. 1943
Über eine neuerworbene Sammlung von Skorpionen des Natur-Museums Senckenberg.
Senck.Frankfurt 26(4): 205-244, pls.1-6.
- Schenkel, E. 1949
Mitteilungen über Spinnentiere.
Verh.Naturf.Ges.Basel 60: 186-204.
- Shulov, A. & Amitai, P. 1959
Observations sur les Scorpions. *Buthus occitanus* ssp. *mardochei* var. *israelis* var.nov.
Archs.Inst.Pasteur Algerie 37(1): 218-225.
- 1960
Observations sur les Scorpions. *Orthochirus innesi* E.Simon 1910 ssp. *negebensis* nov.
Archs.Inst.Pasteur Algerie 38(1): 117-129.
- Simon, E. 1872
Arachnides de Syrie, rapportés par M.Charles Piochard de la Brûlerie (Scorpions et Galeodes).
Ann.Soc.ent.Fr. (5)2: 245-266.
- 1878
Description de deux espèces de Scorpions.
Ann.Soc.ent.Fr. (5)8: 158-160.
- 1880
Études arachnologiques, 12e mémoire-XVIII. Description de Genres et Espèces de l'ordre des Scorpions.
Ann.Soc.ent.Fr. (5)10: 377-398.
- 1882
* Étude sur les Arachnides de l'Yemen méridional.
Ann.Mus.Civ.st.nat.Genova 18: 207-260, pl.viii.[Sc.244-250,258-259]
- 1884
* Arachnides recueillis par M.l'abbé A.David à Smyrne, à Beirout et à Akbés en 1883.
Ann.Soc.ent.Fr. (6)4: 181-196.[Sc.191-2]
- 1885
Étude sur les Arachnides recueillis en Tunisie en 1883 et 1884 par MM. A.Letourneux, M.Sedillot et V.Mayet, membres de la Mission de l'Exploration scientifique de la Tunisie.
Exploration scientifique de la Tunisie. Paris. pp.1-55.
- 1890.
* Étude sur les Arachnides de l'Yemen.
Ann.Soc.ent.Fr. (6)10: 77-124.[Sc.122-123]
- 1892
Liste des Arachnides recueillis en Syrie par M.le Dr Theod.Barrois.
Rev.biol.Nord.Fr. 5: 80-84.
- 1904
Étude sur les Arachnides recueillis au cours de la Mission du Bourgade-Bozas en Afrique.
Bull.Mus.Hist.nat.Paris 7: 442-448.
- 1910
* Revision des Scorpions d'Egypte.
Bull.Soc.ent.Egypte 1910 : 57-87.

Sissom, W.d. 1990

* Systematics, Biogeography and Paleontology.

In: The Biology of Scorpions. Ed. G.A.Polis pp.64-160.
Stanford University Press, Stanford, California.

Thorell, T. 1877

Etudes Scorpiologiques.

Atti.Soc.Ital.Sci.Nat. 19: 75-272.

----- 1893

Scorpiones exotici R.Musei Historiae Naturalis Florentini.

Bull.Soc.ent.Ital.Firenze 25: 356-387.

Tullgren, A. 1909

* Solifugae, Scorpiones und Chelonethi aus Ägypten und dem Sudan.

In: L.A.Jägerskiöld (ed.), Results of the Swedish Zoological
Expedition to Egypt, 1901, Uppsala. 3(21), A: 1-12.

Vachon, M. 1942

* Remarques sur un Scorpion predesertique peu connu

Buthiscus bicalcaratus Birula

Bull.Mus.natn.Hist.Nat.Paris, 2e série, 14(6): 419-421.

----- 1948a

Études sur les Scorpions.

Arch.Inst.Pasteur Alger 26(3): 289-316, figs.148-187.

----- 1948b

Idem. Ibid. 26(4): 441-481, figs.188-241.

----- 1949a

Idem. Ibid. 27(1): 66-100, figs.242-292.

----- 1949b

Idem. Ibid. 27(2): 134-169, figs.293-363.

----- 1949c

Idem. Ibid. 27(4): 334-396, figs.372-476.

----- 1950a

Idem. Ibid. 28(2): 152-216, figs.477-557.

----- 1950b

* A propos d'un nouveau Scorpion de Mauritanie.

Bull.Mus.natn.Hist.Nat.Paris, 2e serie, 22(4): 456-461.

----- 1951

* Sur quelques Scorpions "Halophiles" (Microbuthus fagei,

Mesobuthus confucius et Euscorpius flavicaudis).

Bull.Mus.natn.Hist.Nat.Paris, 2e série, 23(3): 256-260.

----- 1952a

* Études sur les Scorpions.

Institut Pasteur d'Algerie. 482 pp., 697 figs.

----- 1952b

Complem.description scorpion mauritanien Lissothus occidentalis.

Arch.Inst.Pasteur Alger 30(2): 172-177.

----- 1953

* Contribution a l'étude du peuplement de la Mauritanie. Scorpions.

Bull.Inst.Fr.Afr.Noire 15(3): 1012-1028.

----- 1966

* Liste des Scorpions connus en Égypte, Arabie, Israel, Liban, Syrie,
Jordanie, Turquie, Irak, Iran.

Toxicon 4: 209-218.

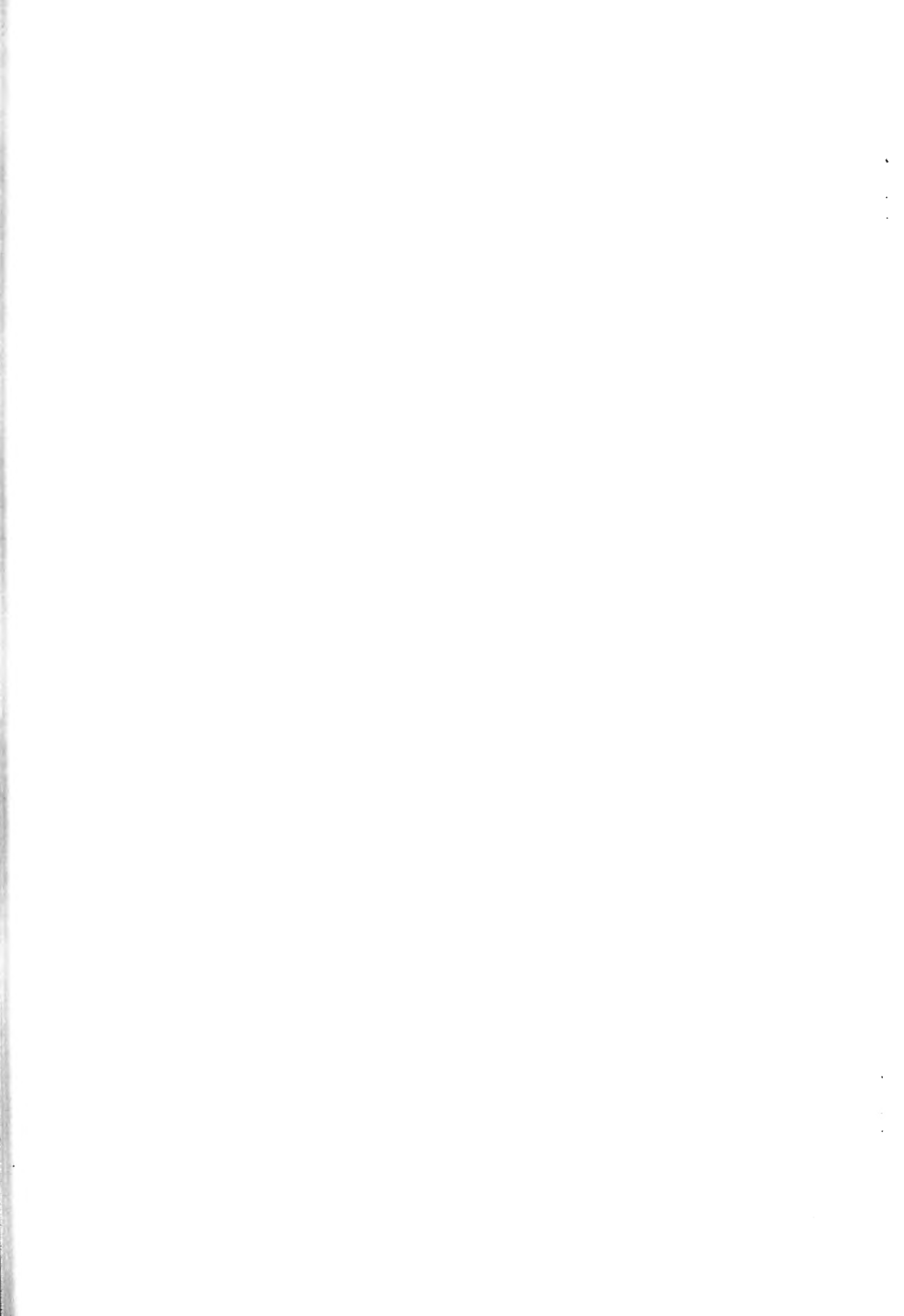
----- 1974

* Étude des caractères utilisés pour classer les familles et les
genres de Scorpions (Arachnides). 1. La trichobothriotaxie en
Arachnologie. Sigles trichobothriaux et types de
trichobothriotaxie chez les Scorpions.

Bull.Mus.Natn.Hist.Nat.Paris 3e série, 140, Zool.104: 857-958.

- , 1977
 * Scorpions. In: The Scientific results of the Oman Flora and Fauna Survey 1975.
 J.Oman Stud., Spec. Rep. 1: 209-218.
- , 1979
 * Arachnids of Saudi Arabia. Scorpiones.
 Fauna of Saudi Arabia I: 30-66.
- , 1980
 * Scorpions du Dhofar. In: The Scientific results of the Oman Flora and Fauna Survey 1977 (Dhofar).
 J.Oman Stud., Spec. Rep. 2: 251-263.
- Vachon, M. & Kinzelbach, R. 1987
 * On the Taxonomy and Distribution of the Scorpions of the Middle East.
 Proc. Symp. Fauna & Zoogeogr. Middle East, Mainz 1985, A 28: 91-103.
- Vachon, M. & Stockmann, R. 1968
 Contribution a l'étude des Scorpions africains appartenant au genre *Buthotus* Vachon, 1949 et étude de la variabilité.
 Monitore zool. ital. Firenze 2 suppl.: 81-149, 69 figs.
- Wahbeh, Y. 1976
 * A study of Jordanian scorpions.
 Jordan Med. Journal 11(2): 84-92.
- Werner, F. 1902
 * Die Skorpione, Pedipalpen und Solifugen in der zoologisch-vergleichend-anatomischen Sammlung der Universität Wien.
 Verh. zool.-bot. Ges. Wien 52: 595-608.
- , 1916
 Über einige Skorpione und Gliederspinnen des Naturhistorischen Museums in Wiesbaden.
 Jahr. nass. ver. Natk. 69: 79-97.
- , 1929
 Wissenschaftliche Ergebnisse einer zoologischen Forschungsreise nach Westalgerien und Marokko.
 Sitz. Ber. Akad. Wiss. Wien 138: 1-34, 4 pls.
- , 1932
 Ergebnisse einer zoologischen Forschungsreise nach Marokko.
 VI: Skorpione.
 Sitz. Ber. Akad. Wiss. Wien 141: 284-306.
- , 1935
 Ueber Skorpione aus Palastina.
 Zool. Anz. 109(7/8): 211-216.
- , 1936
 Neu-Eingänge von Skorpionen im Zoologischen Museum in Hamburg.
 Festschrift f. Embrik Strand Riga 2: 171-193.
- Whittick, R.J. 1941
 * Arachnida: Scorpiones, Pedipalpi and Solifugae.
 Expedition to South-West Arabia, 1937-38.
 Br. Mus. Nat. Hist. London 1(5): 43-49.
- , 1947
 * Results of the Armstrong College Expedition to Siwa Oasis (Libyan Desert), 1935. Scorpiones [Arachnida].
 Bull. Soc. Fouad 1er Entom., 31: 121-126.





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